

# INSIDE DOPE

by GEORGE F. TAUBENECK

**Foxy Grandpa**  
**Some of the Brave**  
**Betting That Russia Won't Fight**  
**Targets for the NPA**  
**How YOU Could Be Affected**  
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**Summation**

## Foxy Grandpa

Trying of being called "grandpa" old Eph Coots up and took himself an 8-years-old bride. Eph was 70 if he was a day.

"I'm to start me a brand new family," boasted Eph to his doctor. "Well, well," Doc peered over his spectacles. "That's fine. Tell you what, though. To keep that young bride of yours happy, you ought to have some one near her age in the house. Why don't you take in a boarder?"

"Good idee," Eph agreed. "Would help with the expenses, too."

Several months later they met again.

"How's the young bride?"

"Wonderful. And, by the way, she's pregnant," beamed old Eph.

The doctor congratulated him, and peered over the top of his specs again.

"And how is the young boarder?"

"Oh, she's pregnant, too."

## Home of the Brave

At the A.S.R.E. convention in Detroit recently "Dope" really was a dope. With considerable reluctance we made a few guesses about the supply of scarce materials for our industry during the next 12 months. Here is a version of those possibly foolhardy guesses. (Substantially the same version appears in the July issue of *Refrigerating Engineering*.)

Trying to forecast the Future—at this uneasy Crash Point in history is something like trying to explain the Theory of Relativity. Worse, in fact. The Relativity Theory is established even if it is obscure; whereas the Future can be as unexpected as foxy grandpa Eph. This is especially true when war or peace can be dictated by a nation which Winston Churchill called "a riddle inside an enigma wrapped in a mystery."

Five-star Generals MacArthur, Marshall, and Bradley—surely among the most informed men of our time—have expended several hundred hours of testimony on this subject before Congressional committees. Result: most people are more confused than ever.

How Much of What can be produced by our industry within the fiscal year? All we can do is guess, of course—and pray that Russia will be good. As a matter of fact if one really could crystal-ball the Future, that information could be sold for billions of dollars.

Nevertheless, here is our two-bits' worth.

## Betting That Russia Won't Fight

Wise men, fortunately, are in charge of our defense production program. They learned much during the big war which, it seems, we finished only yesterday. Thanks to their recent experience, they know what they're doing, and what they intend to do. And they have been gracious enough to give us "off the record" interviews as to what we can expect. They could be awfully wrong about the Future—which would make these predictions wrong.

However, the men who "make the wheels go 'round'" in our Defense Establishment apparently believe that Russia won't start World War III this year, maybe not next year, and maybe not for 10 years. Counter-spy report that Kremlin men are quite respectful of our strength-in-being, as they should be. They know that

- (1) Our Navy is the world's best.
- (2) Our atomic-bomb potential is frightening.
- (3) Our air power and advanced

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## Ban Water for Cooling In Flooded Kansas City; Most Plants Undamaged

KANSAS CITY, Mo., July 18—The limitation on store hours was removed today and some industrial operations were permitted to start up again in flood-stricken Kansas City, but restrictions on water use kept many establishments from operating, and shut down air conditioning and refrigeration systems using water.

Under the terms of an emergency proclamation, no air conditioning units using either private or public water can be operated. The ban on water use also covers refrigeration systems with water-cooled condensers. This latter ban has resulted in some hardships for some food stores, and some industrial establishments using refrigeration systems in process works. There have been some starts to changeovers to air-cooled condensers.

Plants in the Kansas City area manufacturing refrigeration and air conditioning equipment for the most part escaped heavy damage from the flood. The Marley Co., manufacturer of cooling towers, was flooded out, and has established temporary headquarters at Southwest High School in Kansas City, Mo.

Koch Refrigerators, Inc., Viking Refrigerators, Inc., and The Vendo Co., all manufacturers of commercial refrigerators, were out of the main

flood area and suffered mainly from some loss of plant time.

Koch, which is located in North Kansas City, in a bulletin to its distributors said that its factory "is almost completely without damage" and the plant went back into operation on July 17, ready to ship new merchandise. However, Koch warned its distributors that problems might arise because "we do not know how much outbound merchandise is now submerged in trucks and freight cars, nor do we know how much mail has been lost."

Several Koch reach-in refrigerators were loaned to the Red Cross and the Salvation Army for their use at emergency points.

The North Kansas City area was ordered evacuated Friday afternoon, July 13, and Koch personnel were sent home in compliance with the order, but Koch vice president C. K. Litman, production manager Oscar Marr, plant superintendent M. J. Houghton, and Al Schrimsher, engineer, stayed on at the plant Friday and Saturday pumping back-up water out of the elevator shafts.

"Operation Porkchop" has begun in an effort to save 25 million lbs. of meat and other perishables stored in the packinghouse plants and cold

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## Proposed Plumbing Code Would Save Critical Materials

WASHINGTON, D. C.—Groundwork for a national plumbing code that would standardize and simplify plumbing practices and effect a tremendous saving in critical materials was recently completed here by the Coordinating Committee for a National Plumbing Code.

The committee's report has been issued jointly by the National Production Authority and the Housing and Home Finance Agency and is available from the U. S. Government Printing Office at 50 cents per copy.

The report contains a proposed permanent national plumbing code, 22 basic sanitary and safety principles that define the intent of the code and a foreword telling of the work of the committee. Discussion of the various phases of the code is covered in 14 chapters that constitutes the bulk of the 125-page report.

The Defense Production Administration has announced that officials in 11 Federal agencies, including NPA and HHFA, have agreed to abide by the provisions of this code to conserve critical materials in new government building projects, including military.

DPA pointed out that there are

(Concluded on Back Page, Column 1)

## Thor Gets Ceiling Price On Optional Warranty For Spinner Washer

WASHINGTON, D. C.—A \$3 ceiling price on a 4-year additional warranty covering the sealed mechanism of a Thor spinner washer was established recently by the Office of Price Stabilization.

This warranty is optional and would be in addition to the regular 1-year warranty that is included in the sale price of the washer.

Thor made the request for the

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## OPS Ok's Coolerator's Present Ceiling Prices

DULUTH, Minn.—The Office of Price Stabilization has granted The Coolerator Co.'s request to continue use of its present ceiling prices as determined by the General Ceiling Price Regulations.

As a consequence, there will be no change in the company's prices to its distributors or in its recommended national retail prices to dealers, and thus no rollback, Coolerator said.

"According to the OPS ruling, the basis for this grant is the fact that the CPR 22 formula, applied to the

(Concluded on Page 4, Column 4)

## Manitowoc Shows 20-Cu.Ft. Combination Refrigerator-Freezer

MANITOWOC, Wis.—A combination refrigerator and freezer offering 10 cu. ft. of low temperature space and 10 cu. ft. of normal temperature space has been introduced by the Manitowoc Equipment Works here.

Called the Sub-Zero Ten-Ten, the unit is designed to give the housewife ample storage space for both refrigerated and frozen foods right in her kitchen without taking up too much floor space.

With refrigerated compartment on top and freezer below, the box stands 68 1/4 in. high, is 36 in. wide, and 29 3/4 in. deep.

It is powered by a 1/2-hp. Tecumseh hermetically sealed compressor with a primary coil using "Freon-22" serving the freezer and a secondary coil using "Freon-12" serving the refrigerator compartment. Separate controls are mounted in each compartment.

The system is of the restrictor tube (capillary) type, with cold wall refrigeration of the lower compartment. The upper compartment is refrigerated by the secondary coil which is cooled by contact with the primary coil. Steel tubing is used in

(Concluded on Back Page, Column 2)

## Govt. Threatens Mfrs. Using Price Coercion

WASHINGTON, D. C.—Attorney General McGrath recently "shook his fist" at manufacturers, wholesalers, and retailers who try to coerce or pressure non-signers of fair trade agreements into maintaining established prices.

He threatened them with criminal prosecution and appealed to the people to report any instances they knew of to the FBI.

He explained that it is legal for a manufacturer to establish sale prices for retailers who sign fair trade agreements, but he stressed that "horizontal" agreements among manufacturers, wholesalers, or retailers are illegal. He added that the anti-trust laws forbid coercion to establish prices.

Meanwhile the *Wall St. Journal* made an informal survey of the attitude among many of the companies that had fair traded their goods before the U. S. Supreme Court knocked out the "non-signer" clause.

The paper found only a few really trying to keep fair trade alive. Some were making half hearted efforts in that direction, but seemed to be greatly impressed by the size of the obstacles in their way.

Some companies, it said, had drawn up new fair trade agreements with the intention of having all retailers who handle their products sign them. But they held back from actually

(Concluded on Page 4, Column 1)

## Producers Have Until July 31 To File for Metals Requirements

WASHINGTON, D. C.—Manufacturers of consumer durable goods, including household appliances, have until July 31 to file with the National Production Authority their initial requirements for copper, steel, and aluminum for the fourth quarter of this year.

They are also asked to anticipate their needs for the first three quarters of 1952.

They are to pick up their CMP-4B forms at their nearest NPA field office.

NPA said that consumer durable goods manufacturers are not permitted to apply for more materials than they require to fill all defense-related orders, plus the amounts of steel, copper, and aluminum permitted to be used for unrated orders during the third quarter by order M-47A.

NPA explained that third quarter limitations of M-47A are being used again for the fourth quarter because, under the Controlled Materials Plan, no consumer durable goods manufacturer will receive more controlled materials than the amounts permitted under M-47A.

That means no more than 70% of the steel, 60% of the copper, and 50% of the aluminum they used in the average of the first two quarters of 1950 or the last two quarters of 1949.

Those manufacturers who will re-

(Concluded on Page 4, Column 3)

## To Allocate Nickel In Sept. For Stainless Steel Makers

WASHINGTON, D. C.—Stainless steel producers have been notified by the National Production Authority that nickel will be allocated to them starting in September.

Such action will be necessary, the NPA said, because of the serious shortage of the rust-resisting nickel.

## Congress Group Moves To Fight Credit Controls

### Southern Bloc Wars on Reg. W as 'Opening Wedge to Fascism In U.S.'

WASHINGTON, D. C.—A bi-partisan move to eliminate or modify instalment credit restrictions in Regulation W was scheduled to be launched in Congress this week.

Rep. Patman (Texas) is said to have prepared a motion calling for the abolition of the credit restrictions. The movement to wipe out the curb on credit terms is led by southern Democrats who charge that Regulation W is the opening wedge of fascism, administered through government snoopers, and calling for paupers oaths.

A resolution calling for an investigation of the Federal Reserve Board has the backing of Rep. Tackett (Arkansas) who declares that—

"Left wing intellectuals around President Roosevelt first schemed up this regulation in 1938. They had been looking for years for an opportunity to destroy the instalment credit business because they knew that ultimately that would mean the end of democratic capitalism."

## Kelvinator Delays Price Increases

DETROIT—Recent price increases on four Kelvinator home freezers and seven electric range models have been suspended temporarily, Kelvinator division of Nash-Kelvinator Corp. announced last week.

A Kelvinator spokesman said that the increases are still in effect but that distributors and dealers have been asked to hold off on applying them until the price freeze imposed by the Office of Price Stabilization is dissolved.

When Congress failed to extend the Defense Production Act (which authorizes price controls) by the July 1 deadline, OPS issued a General Overriding Regulation 13 freezing prices as of June 30.

This official noted that the increases, which were to apply as of July 2, had been approved by OPS in mid-June.

## OPS Requests New Data For Fair Trade Pricing

WASHINGTON, D. C.—In the light of the U. S. Supreme Court decision declaring that non-signers of fair trade pacts do not have to abide by them, the Office of Price Stabilization has changed its procedure for setting fair trade price ceilings.

Now, the dealer or wholesaler must show:

1. That he himself actually signed

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## FCC May End Ban on New TV Stations In Sept.

WASHINGTON, D. C.—The Federal Communications Commission may lift its ban on new television stations in September, if present plans for speeding up the study of channel allocations prove effective.

So Wayne McCoy, FCC chairman told the Senate Interstate and Foreign Commerce committee recently.

He indicated that cities without TV now, would be the first to get licenses for new stations. Then would follow those cities with one or two stations and last of all would come cities with a large number of stations.

He said that about 52 new channels in the ultra high frequency bands would be opened up to supplement the 12 very high frequency channels now in use. About 10% of the total of 65 to 70 additional channels to be made available would be reserved for non-commercial use.

The FCC's freeze on new television

(Concluded on Page 4, Column 2)



## 'Operation Trade'...

## Selling Plan Closes 1 Out of Every 5 Prospects

CHICAGO—A television merchandising program that is said to be producing one immediate sale from every five prospects contacted was described at the recent mid-year meeting of the National Appliance & Radio Dealers Association.

Called "Operation Trade," the program was developed for its RCA Victor TV dealers by Krich-New Jersey, Inc. It was described by William W. Cone, vice president in charge of sales for the northern New Jersey distributor.

Cone said the plan could be applied to many appliances, as well as television.

Specifically, "Operation Trade" is intended to solve the "ordinary" trade-in problems faced daily by television dealers. The program was explained by Cone in the following "problem and answer" fashion:

"Problem 1: There is no profit on the ordinary trade-in transaction until the set taken in trade is disposed of. The dealer must make two sales for one profit.

"Answer: With 'Operation Trade,' the dealer makes his profit with only one sale because, under this program, he can automatically dispose of the traded-in set.

"Problem 2: The dealer has no measure of the value of the set he accepts in trade and is always running a risk.

"Answer: Krich-New Jersey will

**Editors Note:** While the "Operation Trade" merchandising program covers television only, the principles applied here can be adapted to other major appliances as well.

guarantee to purchase from the dealer every RCA 10-in. set he takes in trade—at a price of \$50 per set when accepted in trade against a 1951 big-picture RCA Victor television receiver.

"Problem 3: The dealer takes a chance of losing customer goodwill when he sells the traded-in set because the performance quality is questionable.

"Answer: If the dealer chooses to retain the RCA 10-in. set accepted in trade against a new big-picture RCA TV receiver, Krich-New Jersey will make available to him a plan whereby the RCA Service Co. in our territory will renew and recondition this set—and will replace all parts where necessary. An RCA Service Co. sticker will identify the set accordingly. For this service, Krich-New Jersey will bill the dealer a flat price of only \$8.95.

"Problem 4: The dealer cannot cover his risk on ordinary trade-ins with a service contract and, therefore, eliminates the possibility of making a profit on service.

"Answer: After the RCA Service Co. has reconditioned the old set, the dealer will be permitted to sell any regular RCA service contract at the same rate as prevails on new sets. In addition dealers will be allowed to sell these contracts and earn their regular commission rates.

"Problem 5: When he tries to dispose of ordinary sets taken in trade, the dealer promotes with money 100% out of his cash register.

"Answer: For dealers who wish to promote their reconditioned RCA trade-ins, Krich-New Jersey is making available cooperative advertising funds plus specially-prepared newspaper mats designed to provide dealers with a second profit as well as increased store traffic.

"Problem 6: Traded-in sets transfer the dealer's assets from questionable inventory to dead inventory.

"Answer: With 'Operation Trade,' he chooses only between cash now or two profits."

All the dealer needs to cash in on the plan, claims the distributor, are the names of RCA small-screen set owners in his immediate sales community—his "best trade-in prospects"—and a suitable method of bringing these logical prospects into his store.

Both "solutions," said Cone are being offered to dealers free.

To accomplish its purposes, the distributor has compiled for each of its franchised dealer's trading community an accurate list of small-screen RCA Victor TV owners, complete with model numbers.

On the basis of actual sales results in the Trenton area, these names—and the selling tools developed under test conditions—produced for dealers one immediate sale from every five names contacted and more are developing on simple follow-up, Cone said.

In addition, later results compiled from a five-day period recently ended, showed 43 sales from 201 contacts made by five Trenton dealers. Twenty-eight are still pending, of which half will be closed by these dealers' own estimates.

"The results proved that 'Operation Trade' produced better than one out of four sales with only one third of the program in actual operation at the time," Cone further indicated.

Krich-New Jersey is offering each of its dealers a share of these names on the basis of "actual needs." He said it is backing up the names with an array of selling tools which have been field-tested in Trenton. These include:

Three mailings directed to RCA small-screen TV owners, paid for entirely by the distributor.

A list of names, addresses, and model numbers to enable dealers to follow up effectively.

Special forms to keep accurate records of progress and results.

Complete instructions on proven techniques to secure the largest percentage of sales from prospect's names.

Specific telephone instructions

which have yielded best results, including actual scripts.

Forms to secure credit from Krich-New Jersey for any sets taken in trade for which dealers wish to convert into immediate cash.

Promotion literature and identification.

A window display featuring trade-in stimulants as well as a tieup with the baseball season.

A descriptive list and original list prices of all small-screen RCA sets to guide dealers in making appraisals.

Mats soliciting trade-ins, and mats for resale of reconditioned small-screen RCA sets.

In addition, the distributor has recruited and trained telephone canvassers and assigns them to dealers just getting started with the program. It holds classes for retail salesmen three nights a week to be sure they understand the program.

The over-all distributor program does not stop there, Cone asserted. In addition to "Operation Trade," Krich-New Jersey is making available a home demonstration program called "Operation Demo."

This plan calls for the RCA Service Co. to follow with an expert crew the RCA Victor demonstration set which the dealer delivers to the prospect's home for free trial. This crew immediately makes all necessary adjustments for perfect reception—and will even, if necessary, erect an antenna for the duration of the demonstration, Cone pointed out.

The cost for the entire home demonstration is \$4.95, as billed to the dealer by Krich-New Jersey. If the set is actually sold, the \$4.95 will be absorbed and the demonstration will cost the dealer nothing, he added.



ELECTRICALLY OPERATED sign built on roller principle tells continuous story.

## Moving Sign Attracts Impulse Sales

ST. LOUIS—Something new in the way of a moving sign—one which "rolls over and over" has been developed and put into use by the St. Louis branch of General Electric Appliances, Inc.

A banner cloth 20 in. wide and 113 in. long revolves on rolls of two portable ironers mounted about 5 ft. apart on the wall. Upper roll provides the driving force.

Lettering is done in color with show-card paints which can be washed off easily to change message.

The display stimulated many added "reminder" sales from dealers visiting the parts department. Charts cost around \$15.

## Solves Air Conditioning Problem in occupied 34-story office

Improvement designed to enhance property value and increase efficiency of 4000 employees

The New York Life Building... an imposing "skyscraper" in the world-famed Madison Square, New York.



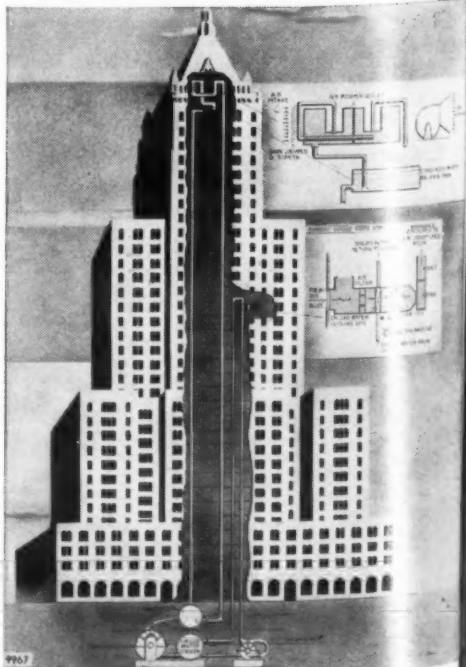
**THE PROBLEM.** Well recognizing the value of air conditioning as an important contribution to employee efficiency and morale, in addition to enhancing the value of their 22-year-old property... directors of the New York Life Insurance Company early last year voted to air condition their entire 34-story building on the site of the old Madison Square Garden in New York.

Although a sizable investment, at least part of the cost would be returned from increased rents of tenants.

However, complete air conditioning for an existing building with over a million square feet of space, and occupied by more than 4000 office workers, challenged the imagination.

**THE SOLUTION.** Engaged to design the best possible system, Meyer, Strong & Jones, Consulting Engineers, N. Y., approached the problem with an open mind. After careful study, they proposed a large central

Photographs Courtesy York Corporation



Cut-away sketch shows arrangement of air conditioning equipment installed in this modern office building.

**CLEANABLE WATER-COOLED CONDENSERS**  
More Efficient Double-Tube Counter-flow Design

1/2 to 25-Ton Capacity

Acceptance in the field is rapidly changing to "Demand" for these efficient, more economical Cleanable water-cooled Condensers. Owners and service men prefer the "new unit" efficiency that can always be maintained by a simple cleaning process. Brass headers, machined and brazed.

Write for Catalog and Prices  
WHOLESALE IN PRINCIPAL CITIES  
**Halstead & Mitchell**  
BESSEMER BLDG. PITTSBURGH 22, PA.

**Another Haertel Air Master DEHUMIDIFIER**

BY THE MAKERS OF THE FAMOUS "VAULTMASTER" DEHUMIDIFIERS, STANDARD IN MANY INDUSTRIES SINCE 1938.

AIR-MASTER model 50-B is a new advance in the art of drying air mechanically. Its "Ratio Damper" gives peak performance at any space temperature from 65° to 95° F. A third heat exchange element permits a part of the work done in cooling the entering air down to dew point, to be recovered. This cuts down refrigeration load. The 50-B challenges all competition for efficiency and economy.

Protect critical equipment and materials from moisture, damage by RUST, MOLD, MILDEW, ROT, WARPING, TARNISH, CORROSION, CAKING.

SELL THIS AND OTHER MACHINES IN THE HAERTEL LINE. YOUR INQUIRY INVITED. WRITE TODAY.

**WALTER HAERTEL CO.**  
2840 4th AVENUE SOUTH, MINNEAPOLIS 8, MINN.



**What To Look for:****Prospective TV Dealers  
Get Preview of Problems  
Under NARDA Guidance**

CHICAGO—Preview of problems, techniques, and facilities encountered in television receiver retailing will be given dealers from regions not yet served by television broadcasts under a new program being initiated by the National Appliance & Radio Dealers Association, Mort Farr, NARDA's president, has announced recently.

"Under this arrangement," he explained, "the association will ask member dealers from television areas to serve as hosts to retailers from non-television cities and give them first-hand exposure to what's involved in selling sets. We'll try to match guest and host in type of operation and size of communities and not spread them too far apart geographically so that we can keep this new service as practical as possible," Farr explained.

The host dealers will be expected to show their guests the methods used for displaying and demonstrating receivers, the importance of good installations, and, if many are to be shown in the store, a good signal distribution system. Prospective TV dealers will be shown television service operations so that they can determine whether they should become self-servicing dealers or farm out this activity and they'll be given information, essential test equipment, personnel requirements, parts inventories needed, and basic facts about

television ranging from how to tune a set to the ratio of turnover to mark-up.

"We are asking our host dealers to try, so far as possible, to avoid placing emphasis on specific brands of merchandise, but rather to help give guests the 'feel' of the industry, to know the tube sizes, the relative costs of table models, open-faced consoles, consoles with doors, and combination units, to know something about programs, and to pick up selling techniques," Farr further explained.

"We hope, in this manner, to equip the new retailers to avoid many mistakes they'd make otherwise and to make early contributions to the growth of the industry," Farr concluded.

**N. Y. City Council To Vote  
On Proposed TV Service  
Licensing Bill Aug. 14**

NEW YORK CITY—The New York City Council is expected to vote Aug. 14 on a proposed TV service licensing bill that would set up a seven-man supervisory committee to license and regulate all TV service interests, it was reported here recently.

Amendments to the original bill, as approved by the council's committee on general welfare, make it a misdemeanor to remove serial numbers from a TV set or to give incomplete or no work estimates for service work.

A councilman estimated that at the earliest, the bill could not become a law before October or November.

**ACRMA Sections  
Elect 1951-52 Officers**

WASHINGTON, D. C.—Various product-sections of the Air Conditioning and Refrigerating Machinery Association elected officers for 1951/1952 in recent meetings, ACRMA headquarters has announced.

Results were as follows:

Room Air Conditioner Section: chairman, M. T. Bard, Airtemp Div., Chrysler Corp.; vice chairman, H. L. Laube, Remington Corp.; and engineering committee chairman, W. L. McGrath, Carrier Corp.

Self-Contained Air Conditioner Section: chairman, T. E. Smith, Westinghouse Electric Corp.; vice chairman, W. G. Cox, General Electric Co.; and engineering committee chairman, R. E. Holmes, Worthington Pump & Machinery Corp.

Small Compressor and Condensing Unit Section: chairman, C. E. Ploeger, Servel, Inc.; vice chairman, F. E. Lehman, Frigidaire Div., General Motors Corp.; and engineering committee chairman, W. L. Knaus, General Electric Co.

Central Station Air Conditioning and Refrigeration Equipment Section: chairman, O. E. Gammill, Jr., Carrier Corp.; vice chairman, J. R. Hertzler, York Corp.; and engineering committee chairman, A. J. Malinckrodt of Baker Refrigeration Corp.

Large Compressor and Condensing Unit Section: chairman, F. W. Smith, Baker Refrigeration Corp.; vice chairman, W. H. Aubrey, Frick Co., Inc.; and engineering committee chairman, E. B. Dunphy, Acme Industries, Inc.

**W. H. Maxwell To Assist  
Wolverine Vice President**

DETROIT—H. Y. Bassett, vice president and general manager of the Wolverine Tube Div. of Calumet & Hecla Consolidated Cooper Co., Inc., has announced the appointment of W. H. Maxwell as assistant to the vice president for the firm in Washington.

Maxwell, formerly director of sales for Wolverine Tube, has moved to Washington to assume his new responsibilities. He will work closely with government control agencies, and on brass mill industry contacts.

G. D. Potter, as general sales manager, will continue to direct Wolverine's sales activities.

**Sealed Unit Parts To Give  
Demonstration-Lectures**

NEW YORK CITY—Sealed Unit Parts Co., Inc., manufacturer of refrigeration parts, is scheduling a series of demonstration-lectures throughout New England on new equipment and practical maintenance during the coming year.

The first lecture was given in Boston this month by Henry Ehrens, company president, and Sidney Weiner, secretary. They introduced a new pump rebuilding chemical at the Boston chapter of Refrigeration Service Engineers Society meeting at the Hotel Bradford.

The new chemical, developed by Sealed Unit's chemical division, flushes water from the surface of metal and provides a microscopic protective coating to resist rust. This action was demonstrated to the audience in a plastic tank where chemical action on water could be seen. Water fell from the metal in droplets and settled to the bottom of the tank.

Weiner said the chemical will be distributed to jobbers in the future.

**Large A. C. Contract Let In La.**

PINEVILLE, La.—What is said to be the largest air conditioning contract ever awarded a central Louisiana firm—\$109,957.87 for air conditioning 11 hospital buildings and four dental clinics at Camp Polk, La., has been awarded to Jimmy Walker Home Appliances here.

**Give Away a Shetland Pony  
And Your Sales Will Soar,  
A Springfield Dealer's Did**

SPRINGFIELD, Ill.—Note to farm equipment dealers:

If you're looking for a way to attract several thousand people to your store, secure valuable newspaper publicity, and build a huge prospect list, try offering a Shetland pony as the prize in a drawing for children.

Brunk & Sapp, farm equipment firm here, staged such a stunt twice in the past two years.

The stunt was the idea of James Brunk, partner in the store, whose hobby is raising Shetland ponies on a ranch near Springfield. Knowing what a thrill youngsters get out of riding ponies, he reasoned that a chance to win a free one would attract great numbers of them—and their parents—to the store.

So, in 1949, the firm decided to test out the plan. A colorful newspaper advertisement was run inviting children to come to the store and register for the drawing. In order to register, each child was required to bring his parents along and to make a purchase costing at least \$1.

Result: More than 50,000 people flocked to Brunk & Sapp's, registering what they needed in the way of farm equipment, supplies, and home appliances.

The promotion had so much popular appeal that local newspapers gave it considerable editorial space and ran pictures of the pony being presented to the winner.

The stunt was repeated last year. This time the rules were changed so that youngsters could come in by themselves and register.

Again, the drawing was announced in a newspaper advertisement. To attract even more attention, Brunk tethered five of his Shetland ponies in front of the store.

Registrations for this drawing were permitted for 30 days, and more than 150,000 people—adults and children alike—poured into the store. The youngsters, when making out their registration cards, were asked to list the items which they felt their parents would be interested in purchasing.

When the whole thing was over, the firm had a prospect list so large that it is still following up leads.

# Installation Problem Every office building

system to operate in the conventional manner. Costs and construction time were estimated and the job of installation scheduled over a period of months.

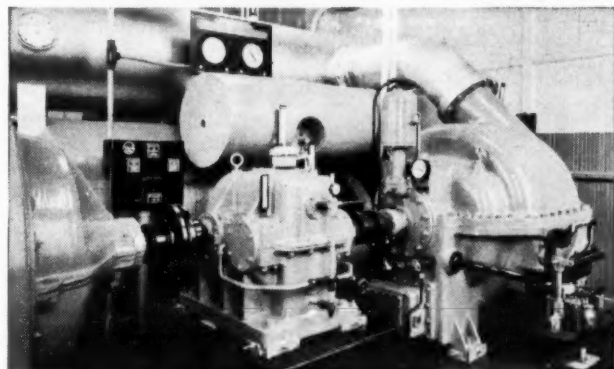
**THE INSTALLATION.** Recommended system consisted of three York Turbo Compressors of 300,600 and 800 h.p., condensers and water coolers of 3000 gallons per minute total capacity. Water is re-circulated with minimum waste. Typical arrangement shown at bottom of cut-away diagram was supervised by the York Corporation.

The system serves all 34 floors through 50 fan rooms strategically located, housing chilled water coils, filters, steam coils and blowers. Combined, they deliver 500,000 c.f. of conditioned air per minute. Note diagram on 20th floor.

Because the building has a pyramidal tower, conventional cooling towers could not be used. For this reason, washer coolers of 4500 g.p.m. capacity were installed in former gymnasium on the 34th floor. (See diagram). An unused 500-foot shaft from basement to top floor facilitated installation of two 16" pipelines between equipment and coolers. Constant water level is maintained in the system by a 10-x 20-foot balance tank on the 33rd floor.

Chilled water is pumped from basement to fan rooms

where outside air, mixed with re-circulated air, is blown over chilled water coils, dehumidified, filtered and forced through ducts to wall and ceiling grilles. Floors are divided into zones separately controlled.



One of three York Turbo Compressors installed in third sub-basement of the building. Equipment uses "Freon" safe, dependable refrigerants.

This clean-cut, efficient system is operated with "Freon" safe refrigerants . . . assuring dependable, economical and trouble-free performance over a long period of time. Use of "Freon" eliminates risk as these refrigerants are nonflammable, nonexplosive, practically nontoxic . . . and they meet all building codes.

**LOOKING AHEAD.** Whether a structure is old or new, large or small . . . it's agreed today that a property's usefulness and value can be substantially increased by modern air conditioning. Owners, tenants, employers and employees benefit wherever and wherever air conditioning is introduced. Owners may ask and get more rent. Tenants obtain better, more comfortable quarters . . . set up production. Employees do a better job . . . keep healthier . . . stay in happier spirits.

Look around . . . look ahead . . . there are innumerable air conditioning job possibilities in almost every community. Some may be large-scale operations . . . some not so large . . . but all are promising and represent splendid opportunities in this lucrative field. Why not review your own locality . . . list every likely prospect . . . call personally on those you believe may be ripe for action? And re-

member . . . the wide range of installations operated with "Freon" safe refrigerants readily enables you to recommend equipment of exactly the right type to meet every prospective need. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.



REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

**"FREON" SAFE REFRIGERANTS**

"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon refrigerants.

Now 3 ROOMS WITH 3 DIFFERENT TEMPERATURES in ONE!

- ECONOMICAL
- PRACTICAL
- ADVANCE DESIGN

NOW . . . the manufacturers of famous Kold-Draft products present the

**\* UNIFLOW  
Walk-in Coolers**

• Standard Temperature Coolers

• Multi-Temp Coolers

• Walk-in Freezers

TWO or three rooms with two or three different temperatures from -20° +40°; or whatever temperatures your customer needs!

UNIFLOW'S Multi-Temp Walk-in Cooler is practical and economical to install and operate. It requires only one condensing

\*Trademark Reg. U.S. Pat. Off.

A SECTIONAL  
WALK-IN COOLER  
FOR FOOD  
REFRIGERATION

unit, one blower unit, one expansion valve . . . and one refrigeration hookup.

The UNIFLOW line offers a truly generous value for every customer requirement. Write, wire or phone today for circulars, prices and dealer profit information.

**KOLD - DRAFT DIVISION**  
UNIFLOW MANUFACTURING CO., ERIE, PENNSYLVANIA  
KOLD-DRAFT KWIK-SERVERS KOLD-DRAFT KUB MODELS KOLD-DRAFT "ELECTRIC-ICE" WATER COOLERS  
KOLD-DRAFT BEVERAGE COOLERS KOLD-DRAFT CONSOLE CONVERTERS KOLD-DRAFT KUBE-SERVERS



**Govt. Threatens--**

(Concluded from Page 1, Column 4) going after signatures. They are waiting to see what happens.

With fair trade opponents in key Congressional spots and an anti-fair trade attitude on the part of the administration, the chances of correcting the Miller-Tydings Act by legislation appears to be dim.

Even those who took heart in the thought that goods made and sold within the bounds of a single state would not be affected by the Supreme Court decision, received a body blow.

He ruled that a non-signer of a fair trade contract did not have to abide even when only goods in intra-state commerce were involved.

**FCC Ban--**

(Concluded from Page 1, Column 5) stations was imposed in 1948 to prevent interference between neighboring stations on the same or adjacent channels.

News of McCoy's testimony caused an immediate rush in the New York stock market to purchase TV stocks. Zenith stock went up four points and Radio Corp. of America gained 1/4 point in heavy trading.

**Fair Trade Data--**

(Concluded from Page 1, Column 5) a fair trade minimum price contract; or

2. That the basic fair trade agreement was entered into in intrastate rather than interstate commerce and that the state fair trade act involved required non-signers as well as signers to comply.

If applications for fair trade prices contain sufficient information for OPS to decide whether the wholesaler or retailer was actually required to sell at fair trade prices, the applications will be decided as outlined above.

If sufficient information is not provided, OPS will request additional data and remind the wholesaler or retailer that Supplementary Regulation 29 to the GCPR may afford relief.

This regulation allowed wholesalers and retailers to adjust for changes in prices resulting from various manufacturers' regulations and relieved them from any squeeze resulting from the GCPR.

**Metals Needs--**

(Concluded from Page 1, Column 4) require less than 100 tons of carbon steel, five tons of alloy steel (except stainless), 500 lbs. of stainless steel, 4,000 lbs. of copper and copper base alloy, and 1,000 lbs. of aluminum for the fourth quarter may file at the nearest NPA office listed on the back of the CMP products class list rather than in Washington, D. C. There are 25 of these offices, located in principal cities throughout the country.

Manufacturers who expect to use less than 5 tons of carbon steel, 1/2-ton of alloy steel, 500 lbs. of copper and copper base alloy, and 500 lbs. of aluminum during the fourth quarter for the products in any one class code in the official CMP List B are not required to file at all. They have been awarded a self-allotment SU symbol that does not require prior NPA approval.

Product classes cover all the products listed under a single code number in the B product list. All unitary commercial refrigeration equipment is under one class code, for instance. But, in the domestic field, mechanical household refrigerators are in one class, home and farm freezers in another, household laundry equipment in yet another, and small household appliances in still another.

Incidentally, NPA has revised its original CMP List B and the new list is applicable for the fourth quarter. The changes include removing all the asterisks that denoted the products for which CMP-4B applications were not required for the third quarter, and the addition of new products to the various product classes.

**Kansas Flood--**

(Concluded from Page 1, Column 3) storage warehouses in the flooded area. Boats maneuvered around the flooded plants to take out the meat to refrigerated trucks that are rushing it to other cold storage facilities.

Most of the refrigeration equipment in the packinghouse plants and cold storage warehouses has been knocked out by the flood.

Some distributors of heavy refrigeration equipment who maintained headquarters in the industrial area have been hit by the flood.

Eyewitness accounts of the flood, received by the NEWS from Sam Glass, Koch advertising manager, and E. L. Tramposh, head of Refrigeration Equipment Co., refrigeration supplies wholesaler, told of scenes of disaster and devastation "that cannot be imagined, they must be seen."

Dead livestock strewn over city streets, mud and silt everywhere, and the ever-present danger of oil and gasoline explosions being such that even smoking is banned in many areas, is a part of the picture these eyewitness accounts present.

With only the Army and disaster workers allowed to enter the area from which the flood waters have receded, it is difficult to tell how much repair and replacement will be necessary for refrigeration and air conditioning equipment, and electrical appliances, but the guess is that it will be plenty.

**Flood Victims Freed of Credit Restrictions**

ST. LOUIS — Flood victims in Kansas and Missouri have been freed of consumer credit restrictions for the next six months so that they may replace household equipment lost or damaged in the present disaster.

Emergency action was taken by Federal Reserve Banks of the Eighth Federal Reserve district at St. Louis and the 10th Federal Reserve district at Kansas City.

Those seeking exemptions from Regulation W must sign statements certifying that the loss or damage was caused by the flood.

**Coolerator Prices--**

(Concluded from Page 1, Column 3) Coolerator base period prices, did not produce equitable adjusted prices as compared to competition," it was stated.

The order granting Coolerator's request was issued by OPS on June 28 under the provisions of General Over-Riding Regulation 10.

**Thor Washer--**

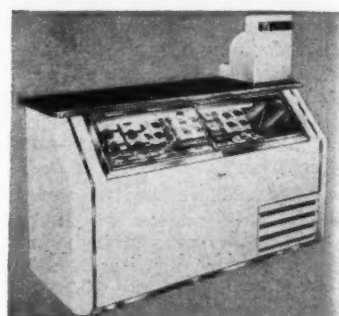
(Concluded from Page 1, Column 2) ceiling price and suggested the \$3 figure.

In setting the price of the warranty, OPS noted that the company had not previously offered such a warranty and that no competitor offered one on an optional basis.

OPS said that it understood that no mark up would be taken on the warranty anywhere along the line.

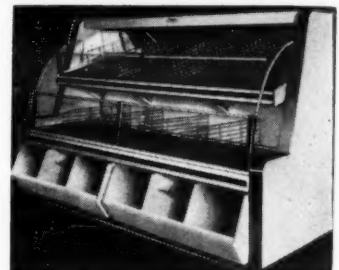
**NEW! EXCLUSIVE**

Only Fogel Offers these Two Models that Eliminate Dealer Competition



FOGEL "ANGLE VISION" COUNTER TOP FREEZER

Recognized as "The successor to the Flat Top"—it is the most versatile space saver and sales builder ever designed. The Ultra Modern case design allows the ANGLE VISION to be placed in space-crammed stores where no other freezer could stand—OPEN UP THIS NEW SOURCE OF PROSPECTS WITH THE FOGEL ANGLE VISION FREEZER.



FOGEL "VEGMART"

The ideal combination case with refrigerated middle deck. Saves space by doing the work of three cases. A complete produce department in one space-saving sales-building case! BRINGS SUPERETTE SELF-SERVICE TO THE "MOMMA & PAPA" STORE.

Write for full information to  
**FOGEL REFRIGERATOR COMPANY**  
5400 EADOM ST.  
PHILADELPHIA, PA.

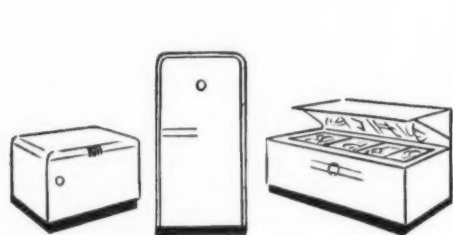
**Stores More in Less Space... Cools Faster!**

**Speed-Freeze**

bottle beverage coolers

write  
**IDEAL COOLER CORPORATION**  
2953 EASTON AVE., ST. LOUIS 6, MO.

# Bundyweld... backs up your claim of better refrigeration



The better the tubing in vital coils, condensers, refrigerant lines, the better the performance of your completed refrigeration units. In the small-diameter tubing field, Bundyweld stands alone—the only tubing double-walled from a single strip, with an exclusive beveled edge.

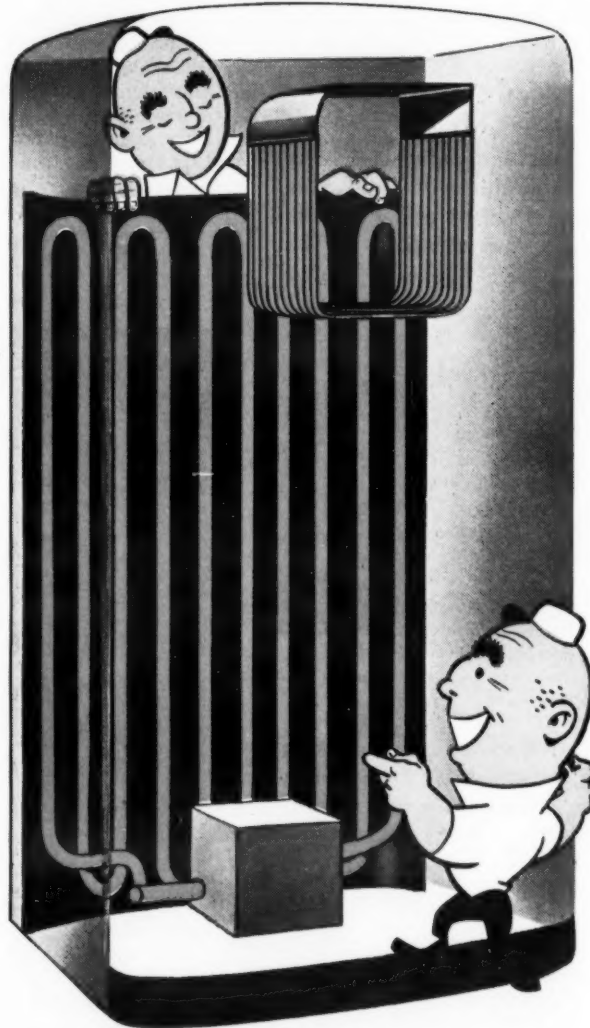
Bundyweld's double-wall construction makes for stronger yet thinner walls. Its thinner walls transmit heat faster. Copper-brazed through 360° wall contact, Bundyweld is leakproof. It offers more than better performance and unique construction, too.

Ductile Bundyweld bends to short radii without weakening or collapsing structurally. It forms quickly, easily. Its close tolerances cut down rejects, smooth production along.

**Bundy backs up Bundyweld**

If a new tubing unit looks extra complicated, just bring the specifications to Bundy. We'll work it out—produce it, too, if you want. We'll check every inch of your Bundyweld parts, ship them ready and right for better performance in your better refrigeration units.

For more complete information, write: **Bundy Tubing Company, Detroit 14, Michigan.**



# Bundyweld Tubing

DOUBLE-WALLED FROM A SINGLE STRIP

**WHY BUNDYWELD IS BETTER TUBING**

Bundyweld starts as a single strip of basic metal, coated with a bonding metal. Then it's...



continuously rolled twice around laterally into a tube of uniform thickness, and



passed through a furnace. Bonding metal fuses with basic metal, presto—



Bundyweld... double-walled and brazed through 360° of wall contact.



SIZES UP TO 3/8" O.D.

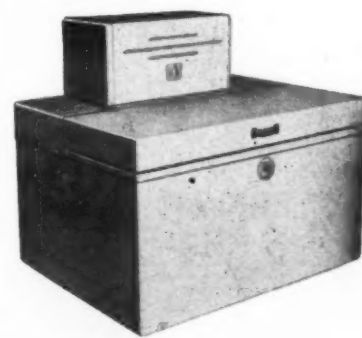
NOTE the exclusive patented Bundyweld beveled edge, which affords a smoother joint, absence of bead and less chance for any leakage.

Bundy Tubing Distributors and Representatives: Cambridge 42, Mass.: Austin-Hastings Co., Inc., 226 Binney St. • Chattanooga 2, Tenn.: Pearson-Deakins Co., 823-824 Chattanooga Bank Bldg. • Chicago 32, Ill.: Lapham-Mickey Co., 3333 W. 47th Place • Elizabeth, New Jersey: A. B. Murray Co., Inc., Post Office Box 476 • Philadelphia 3, Penn.: Rutan & Co., 1717 Sansom St. • San Francisco 10, Calif.: Pacific Metals Co., Ltd., 3100 19th St. • Seattle 4, Wash.: Eagle Metals Co., 4755 First Ave. South • Toronto 5, Ontario: Alloy Metal Sales, Ltd., 881 Bay St. • Bundyweld nickel and Monel tubing is sold by distributors of nickel and nickel alloys in principal cities.

**WARM WEATHER MEANS MILK COOLER SALES****"ROCK-IT"****MILK COOLERS**

Cools Milk Faster. From 90° - 50° in less than 30 minutes!

NO CENTER CORE OF WARM MILK. Gentle rocking action causes liquid movement and resultant rapid and thorough heat exchange. Easy to install—needs only 28" door opening. . . . Simple to service—entire unit can be removed. . . . Sanitary—easy to clean. . . . Low lift. . . . Drop front. . . . Easy loading. . . . 4, 6, 8, 10 can models.

**"SURE-COLD"****MILK COOLERS**

AUTOMATIC FLOW CONTROL MAINTAINS CONSTANT TEMPERATURE. COOLS MILK FAST.

102 opening diffuser flows solid bank of ice water (2 tons per can per hour) over entire can surface. Timer for constant overnight milk temperature. . . . Sanitary—no pipes or jets to clog or clean—Flowage principle—no pressure splashing. . . . Easy to operate—no protruding pipes or jets in the way. . . . Convert to install—goes thru 32" door. . . . Low lift—11". . . . 4, 6, 8, 11 can models.

**LA CROSSE COOLER CO.**

2801 Losey Blvd. S.

La Crosse, Wis.

EXPORT REPRESENTATIVES:

Melvin Pine & Co., 80 Broad Street, New York, N. Y.

Cable address: Exim:ort



**On Borrowed Time****Advertisement Plays Up Refrigerator Age To Get Additional Sales**

COLORADO SPRINGS, Colo. — Strang's Appliance Store here has run up additional new-refrigerator sales through advertising which points out to consumers that "if your refrigerator is 13 years old, it is running on borrowed time."

According to Walter Strang, veteran Frigidaire dealer who heads the firm, the average housewife believes her refrigerator is at least five years younger than it actually is. So he worked out a 3-col. by 15-in. advertisement headed: "Is it 13 Years Old?"

Cory said: "Yes, if your refrigerator is 13 years old, it is running on borrowed time. For that is the average life of all refrigerators now in use."

"Naturally, some of the better makes last longer, some of the average makes last considerably less. The life of any product is determined by the care and service which is given it."

"A smart idea is to trade in your old refrigerator for higher trade-in value before it breaks down. Buy your next refrigerator from a servicing dealer, and be sure to get one of the leading makes, such as Frigidaire . . . which is preferred by more American women than any other make."

"Buy your new refrigerator from a servicing dealer like Strang's . . . with 20 years' experience in selling and servicing Frigidaires."

Strang reported himself agreeably surprised with the result of the promotion, run in late spring. He said there were at least a dozen additional sales during the following month, which could be traced to the advertisement.

**Free Roast Beef Sandwiches Draw Crowd to Opening**

ROCHESTER, N. Y.—Free roast beef sandwiches proved to be a good traffic drawer at the formal opening of Wolk's newly-enlarged appliance store which is located at 1281 St. Paul St.

The three-day formal opening also featured free roses for women and free suckers and bubble gum for children.

# CHILL CHEST

*The Greatest VALUE in 1000 FREEZERS*

THE FAMILY'S PREFERENCE EVERYWHERE



Reeco, Inc. • DEERFIELD, MICH.

**Producers' Give-Aways Set To Lure Prospects**

ATLANTIC CITY, N. J.—Buy a Camfield toaster and you can have a set of two folding tables with fibre-board tops for \$9.95, compared with the usual retail price of \$17.95.

Purchase a Dormeyer food mixer and you'll be given an electric grinder for free.

In such ways are housewares manufacturers trying to awaken buying interest in an apathetic public. Talks with producers at the national show here revealed other appeals:

With each cylindrical floor model fan, the manufacturer offers a plastic cover which converts the model into a hassock.

Proctor Electric Co. now allows purchasers of any of its products to return them for any reason within 10 days after purchase. Other Proctor gimmicks—a translucent plastic water container for its steam iron so water level can be checked at a glance; wheels on its adjustable ironing board which can be used while sitting down.

**Frosted Beer Mugs Kept In Reach-In Case Up Tavern's Sales**

NEW ORLEANS—Use of a custom-built reach-in refrigerator which puts a coating of ice on beer mugs has more than doubled sales of draft beer at the Lafayette Lounge on St. Charles St. here.

Located in the center of the back-bar, the refrigerator stands 6 ft. high, 3½ ft. wide, and 3 ft. deep. In the top section are five tiers of shelving designed to accommodate 36 large-capacity, heavy-glass beer mugs.

As each beer mug is placed in the refrigerator, it is dipped in clear drinking water which freezes into a coating of frosty ice. Temperature in the box is maintained at a steady 10° F.

Although five cents is added to the price of beer served this way (making the cost 25 cents), most customers now call for a "frozen mug," according to the tavern management.

**N. Y. City Posters Urge Conservation of Water**

NEW YORK CITY—New posters warning of a "dangerously low" water supply and urging conservation and avoidance of waste were to be placed in subway trains here.

The posters were approved by Water Commissioner Dominick F. Paduano as water storage dropped to 87.1% of capacity recently, compared with 91.4% a year ago.

**Brown Instruments Adds 103 Engineers to Staff**

PHILADELPHIA—A 40% increase has been made in the engineering staff of Brown Instruments Div. of Minneapolis-Honeywell Regulator Co.

Because of shortages of engineering manpower, 30 colleges, universities, and technical schools were personally combed in a recruiting campaign conducted by Brown executives, company officials said. As a result, the company reported, 103 additional engineers have been hired.

**Hotpoint Broadcast To Spur Appliance Sales**

CHICAGO—Hotpoint, Inc. is sponsoring Julian Bentley, news commentator, in a daily broadcast over WBBM for the Chicago area. The 15-minute program began July 2 and will run through August 24.

In announcing the new program, William E. Macke, merchandising manager, said that the advertising messages are devoted to five appliance groupings—ranges, refrigerators, dishwashers and disposals, laundry equipment, and water heaters.

This copy is aimed at supporting aggressive selling, while an institutional theme centers around "leadership in the manufacture of complete kitchens and home laundries made in Chicago by Chicagoans."

The program is the first of its kind sponsored by Hotpoint. Unusual interest in world affairs was an important factor in the choice of the program, Macke said. The broadcast is heard at 5:45 p.m. Chicago time.

Bentley is editor of the WBBM news department.

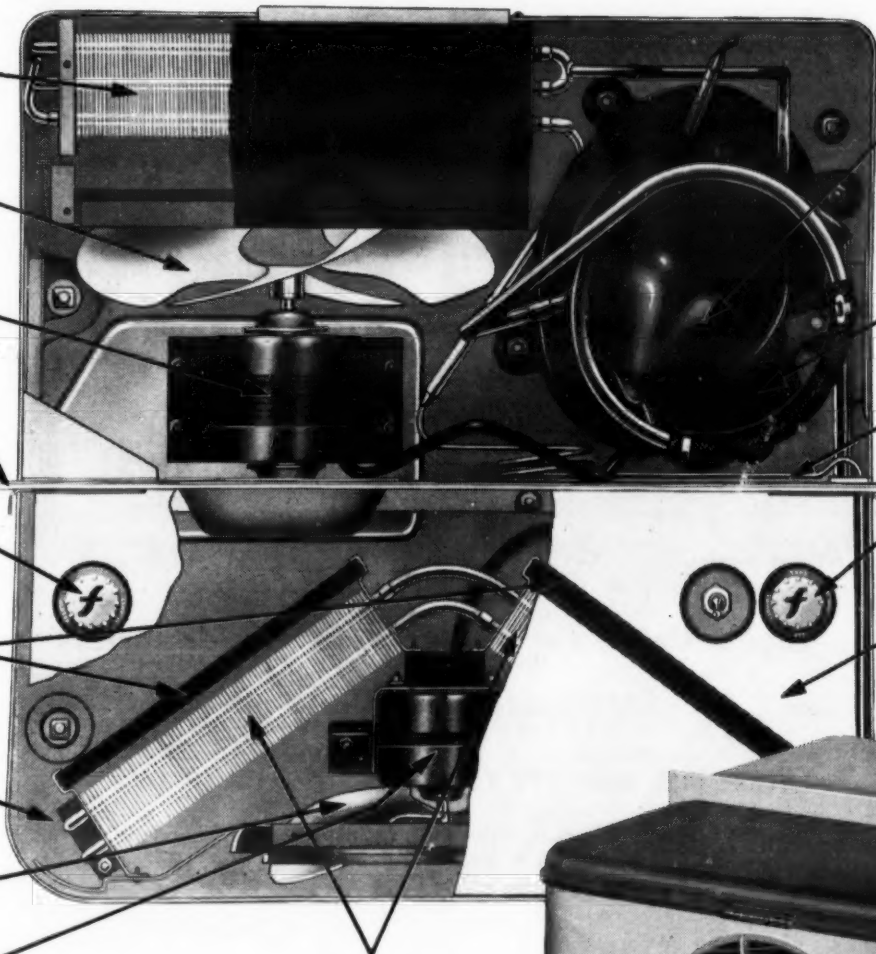
# MORE FEATURES PER SQUARE INCH

## than any other Room Air Conditioner!

1. Three row Special Design Condenser.
2. Slinger-ring fan throws away condensed moisture. No ducts or water connections needed.
3. 2-speed rubber mounted motor for condenser fan.
4. Full width, full height insulated bulkhead keeps hot air out, cool air in.
5. Three position damper door admits fresh air, removes stale air.
6. Twin filters screen out dust and pollen—real relief for hay fever sufferers.
7. Insulated Base Pan protects metal from condensate.
8. Big 2-Speed Circulating Fan forces cool air into room, or circulates room air for maximum comfort.
9. 2-Speed Rubber Mounted Motor for evaporator fan.

10. Exclusive Twin Evaporators provide double the evaporator area for greater cooling capacity.

11. Hermetically Sealed Motor Compressor Unit—completely sealed, leakproof and feather-quiet . . . superb dehydration insures long life of the refrigerant system!
12. Electrical Components mounted on compressor assembly.
13. Capillary Tube-type Refrigerant Control.
14. 4-Position Control Switch for evaporator fan, condenser fan, and complete unit.
15. Beautifully finished Control Panel. Filters removable instantly for cleaning or replacement.



ONLY Fedders offers all these quality features — plus the exclusive Comfort Circle Grille that sends cool air in any desired direction. Fedders' complete line ranges from the new, fast selling 1/3 ton capacity unit (at only \$249.95) to the sensational 3/4 ton unit illustrated. Also handsome console models. Fedders dealers are backed by the biggest campaign in room air conditioner history—13 national magazines plus newspapers and nationwide radio and TV coverage—with spectacular direct mail and point-of-sale support! So get on the profit bandwagon. Mail the coupon or phone your Fedders distributor now!

**fedders**  
A GREAT NAME IN COMFORT

**SEND COUPON FOR NEW PROFIT-PRODUCING IDEAS**

Fedders-Quigan Corporation, Refrigeration Appliances Division  
Dept. AC-7, Buffalo 7, New York

Gentlemen: Please rush me complete information on how I can make extra profit selling the 1951 line of Fedders Room Air Conditioners.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
Company \_\_\_\_\_  
City \_\_\_\_\_  
County \_\_\_\_\_ State \_\_\_\_\_



## INSIDE DOPE

by GEORGE F. TAUBENECK

(Continued from Page 1, Column 1)  
weapons tend to counterbalance larger massed armies of infantry and "cannoneers with hairy ears."

(4) Our Army is capable of rapid expansion around a hard core of men who have had recent battle experience (Russian soldiers haven't fought for more than five years, and her present armies are untested).

(5) Our industrial resources (and this is the clincher) not only are unmatched; they are unmatched within the lifetime of anyone now on Earth. So long as we remain solvent and willing to fight, no sane dictator should challenge us.

However, Stalin or his successor might become foolish or frantic—as did Hitler, Tojo, and Mussolini. If they start something, we'll have to finish it. Therefore, the Big Boys in Washington tell us, we must prepare for any possibility, and chink up the holes in our armor fairly fast. So:

Within the next 12 months, at least 20 percent of our total national production will be taken for strictly military purposes, and another 10 percent will go into expansion of plants and basic industries. This expansion obviously will be useful in case of total war. If World War III doesn't occur, however, it may become a problem.

Some time next year the defense "take" should begin to drop gradually. By the middle of 1953 it should amount to no more than 10 percent of national output, at which point it ought to remain until World War III comes or the Soviet falls apart. Either event may take a long time to happen, which means that we could be carrying that 10% burden so long as some of us will live.

### Targets for the NPA

Three goals have been set up by Mr. Wilson and his associates in the NPA.

(1) To expand production of weapons rapidly, so that the United States can smash Russian forces by the time the latter have a formidable stockpile of atomic bombs. (In brief, to keep her afraid of attacking.)

(2) To expand production capacity by putting up new plants strategically located (that is, difficult to bomb out of commission).

(3) To hold our living standards at a high level, so that we can continue to pay high taxes and, at the same time, stamp down inflation and provide incentives for hard work. (Neat trick if we can do it).

If we don't have a full-scale war soon, the plant expansion program (when completed) should provide not only our present level of high living, plus the 10% defense load that we must expect to carry indefinitely, but put sales and advertising managers on the spot. Also engineers who design new and improved products. Why? Because a tremendous amount of goods will have to be sold to keep these factories going.

This set of projects can be re-

ferred to as Operation Bootstrap. All at the same time we are trying to remobilize, produce new types of advanced weapons, build factories, and keep civilian production high.

Mr. Wilson and his staff obviously realize that our economy can be damaged by piling on too heavy a defense load too quickly. They don't want to hogtie necessary civilian output and services, nor destroy individual incentives. They are Free Enterprisers by nature, training, and conviction. This situation is a refreshing contrast to that which obtained in 1942.

Furthermore, the politicians in Washington feel a growing need for more tax money. That's the big thing in the lives of most administrators and bureaucrats. Taxes come from personal incomes, business profits, and the sale of desirable consumer goods. Hence, everyone in authority seems eager to give civilian industries the best possible "break."

There is no excise tax on a tank.

The defense program as it now stands consists of (1) stockpiling at least a three-years-supply of materials in which we are not self-sufficient, (2) stockpiling enough standard munitions and "out of this world" weapons to fight one full year of World War III, and (3) building secondary factories which can pick up the burden in case major cities are A-bombed.

War production contracts will be scattered around the country in the next 12 months—to minimize the danger of atomic destruction, and to "educate" as many manufacturers as possible. This should be good news to relatively small manufacturers.

More good news: Right now there is no hurry to make weapons much

faster than they could be put into the hands of the men who would use them, or so rapidly that they might become obsolete. Rather, in the year ahead the chief job will be to build up a production potential, plus large enough stockpiles of imported materials to see us through a long war. Best news of all: those stockpiles, for the most part, are in fair shape already.

Unless Stalin goes completely berserk—or starts secondary wars in Iran or elsewhere—shortages of steel, copper, and aluminum and other critical materials may ease off by this time next year. Operation Bootstrap will have succeeded at that time if all goes well.

Our present war production effort is much smaller than that of World War II. Then nearly half of the nation's total production was sent to Europe, the Pacific Theater, and to the bottom of the oceans. At the peak of our present program—which will be running full-blast next December—the military will take no more than a third of our total production, and possibly not even that much.

Another thing: demands for war goods are different this time. What we need most now are such items as electronic controls, fantastically fast planes, and Buck Rogers weapons. We are facing an enemy with a vast manpower advantage. Therefore, engineers must help one warrior to do the work of 10 by increasing the range, speed, accuracy, and reliability of his activities. The electronic equipment on flying, crawling, and diving machines now costs as much as the entire plane, tank, or submarine did in World War II. As a result, the effectiveness of our fighting men has been stepped up astoundingly. Try-outs in Korea prove that one good designing engineer can be equivalent to several thousand infantrymen.

It's an engineer's war! For that reason, requirements for basic materials have changed. Ten years ago we had to manufacture a vast number of ships, guns, munitions, and primary plants. We don't now. We have handsome quantities on hand (most of them in "mothballs"). More will be built, to be sure. But we could fight a war with what we have in stock already. Therefore steel, aluminum, and rubber shouldn't be nearly so short as they were in World War II. Other materials, which our industry doesn't use in great quantity, will be the most critical.

A few alloys of the basic metals we need will be scarce, though, and so will special skills and manpower. That situation will curtail our efforts for awhile. Later on—within six to nine months, perhaps—the requirements of super-modern armament may be so modified by experience that controls on the materials our industry uses can be modified or abated.

### How YOU Could Be Affected

The quantities of refrigeration and air conditioning products that will be produced during the next 12 months will depend on many decisions by many Washington officials. Most of the things our industry makes are essential. We know that; but we must prove their essentiality to dozens of men who may know little about them or what they do for the health and welfare of our country. If you and your advertising experts can provide affirmative answers to most of the following questions, your product is likely to be declared Essential.

1. Is it useful in direct defense production?
2. Is it useful in defense-supporting production? If so, DO ratings can be obtained.
3. Is it necessary for maintenance, repair, and continued operation for household and commercial devices? MRO orders will help.
4. Is a relatively small amount of scarce material vital to the continued operation of your plant? The "horseshoe nail" principle has been recognized in MRO regulations, and will be applied reasonably because it has what the bureaucrats call "leverage."

Food and public health obviously are essential. That's why our industry has a good case at the outset. If this case is stated well, and repeated often enough, we should be in good shape to maintain operations at a modestly reduced level during Operation Bootstrap.

The necessity to keep labor forces and distribution organizations intact, and to maintain consumer recogni-

tion (through production as well as advertising) will have weight in the almighty decisions. And don't forget the need for TAXES.

Government economists figure that another buyer's market is in the cards for late 1952, and that a recession might follow. Hence, they will be receptive to presentations of "hardship cases" by small businessmen as well as by corporate giants. The entire atmosphere is favorable to maintaining civilian business on a healthy scale.

### Copper Is the Key

Now let's get down to cases about the raw materials our complex industry needs and uses.

Because we don't mine enough in this country, copper will be our biggest problem. If manufacturers can forecast the quantities of this precious metal (along with possible substitutions) their purchasing agents can supply in the next 12 months, it won't be difficult to predict their potential production of those civilian items the public wants, and which Mr. Wilson and his staff hope can be made. The present outlook is that the industry may have to get along with 40% less copper than it had in the last fiscal year.

Military demands for both steel and copper could be overloaded as of now, however. Within a few months they may drop a bit, after the actual "chewing up" process is reassessed and reevaluated.

Nevertheless, the biggest job for engineers will be that of getting along with less copper for awhile. Don't say it can't be done. Four months ago the porcelain enamel people were moaning that they couldn't exist without cobalt. Now some of them are wondering why they ever thought it was a mandatory ingredient.

It is our prediction that cutbacks in the production of air conditioning and refrigeration equipment will not be so severe nor so prolonged as some bureaucrats have warned. The ingenuity of engineers in our industry will help tide us over "Operation Bootstrap." Counting on their imagination, it may be predicted that 1952 output of the best publicized refrigeration products (those for which a "case" has been argued successfully) will be comparable to 1949 (a very good year) and possibly close to that of 1950.

Copper stockpiles are in modest shape. New mines are being opened, and older high-cost sources will be subsidized. Net: although scarce copper may hamper production of normal refrigeration products during the next several months, there is no reason to believe it will close factory doors—unless Russian armies move across borders the State Department chooses to defend.

Despite present arbitrary limitations on copper for domestic industries, officials in the NPA assure us that refrigeration manufacturers can get a fair portion of their requirements by scrambling for them in the open market. The "set-aside" amounts which have been publicized may not be used up entirely by munitions makers. Those percentages are protective, and not arbitrary. Plenty of "hardship cases" will get extra quotas, and possibly our industry—or portions of it—will be enveloped into the CMP Plan by midwinter. Much depends on how well we state our case, and how ingeniously we have substituted.

Fair enough?

### Expanding Production of Steel

And how about steel?

Military needs probably won't take more than 25% of our nation's steadily enlarging steel capacity during the next 12 months. Conservation through limitations on "frivolous" manufacturing, plus ever-growing output, should make satisfactory amounts of sheet steel available to our industry by early spring at the latest.

However, electric furnace alloys may be hard to buy for a long time. At this point we should note that larger refrigerating mechanisms have been classified as "machine tools," and thus will get unusually good treatment. That is as it should be. Case and cabinet makers aren't included under Order M-60; but they should fare well, too, because car steel and stampings aren't so "critical."

Steelmakers are expanding error—  
(Concluded on next page)

## UNIVERSAL

## COOLER'S unmatched range

of CONDENSING UNIT sizes and types covers the . . .

# TOUGH JOBS

. . . as well as the EASY ones!

### Make Universal Cooler Your Headquarters for Condensing Units . . .

#### EVERY SIZE AND TYPE YOU NEED

Universal Cooler offers a range of sizes and types of condensing units up to 15 H.P. that is unmatched in the industry. Universal Cooler has EXACTLY the right size and type of unit for virtually every requirement. No substitutions or modifications of units necessary.

#### EXPERIENCE THAT CAN HELP YOU

Universal Cooler Representatives, strategically located across the nation, are experienced in refrigeration and air conditioning. Backing them up is Universal Cooler's long experience in producing condensing units that take into account your installation and service problems.

#### UNIVERSAL COOLER IS NEAR YOU

Wherever you are, Universal Cooler condensing units are only 24 hours away—stocks of condensing units are on hand in strategic centers, and the Universal Cooler factory is geared to make quick shipment from Marion, Ohio.



UNIVERSAL COOLER

MARION, OHIO

TECUMSEH PRODUCTS COMPANY, TECUMSEH, MICH.  
EXPORT DEPT.: 2111 WOODWARD AVE., DETROIT, MICH.

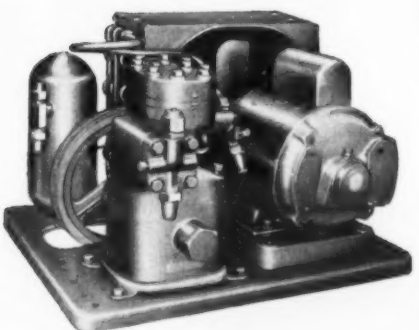
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HERMETICS 1/8 H.P.—1 H.P.



REMOTES 1/4 H.P.—15 H.P.



SELF-CONTAINED 1/6 H.P.—3/4 H.P.

Cash in on the ACCEPTANCE  
UNIVERSAL COOLER Has  
Developed Over the Years!



## INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from preceding page)  
 mously. From the present annual output of 105 million tons they are progressing toward a scheduled rate of 120 million tons or more by fall of next year. Thereafter, both sheet and furnace steel should be ample for all "limited war" needs plus high-grade civilian output. As a matter of fact, shortages of steel for refrigeration and air conditioning may not be bothersome beyond the "merry month" of May, 1952. Some steel-makers are beginning to worry, believe it or not, about selling all they will be able to produce.

### Prospects for Aluminum, Rubber, and Plastics

Aluminum is short presently, but shouldn't be long. In 1949 we used approximately 1,000,000 tons. Nearly 600,000 tons of this amount we dug up and ingoted in our own country. The 400,000-ton remainder came from imports and re-used scrap. Thanks to NPA-nudged expansion programs, around 320,000 tons of primary aluminum should be added to the amount produced annually in the U.S. by midsummer of 1952. And Aluminum Company of Canada spokesmen insist that they can take up America's "slack" in an emergency.

Unless Russia starts the Big War this year, within seven to eleven months substantial quantities of aluminum should be available to nearly all segments of our industry.

Rubber won't be a problem. In contrast to 1942, our synthetic facilities are *in being*, and producing.

However, the need for styrene in synthetic rubber may hamstring production of plastics.

### Summation

The strategic materials situation is troublesome now, and will get worse next fall. New dilemmas, which are beyond the horizon at the moment, could become alarming "when the frost is on the punkin."

However, it is a good bet that the worst of our worries will occur in the next six to eight months. That period fortunately coincides with the traditional slack season for refrigeration and air conditioning. Even if we aren't entirely successful in convincing Washington "brass" that our civilian products are ultra-essential, we should have time to recover our equilibrium before (1) the heavy shooting starts, or (2) business gets awfully bad.

Our industry's greatest challenge today is to avoid end-use limitations. Already the purveyors of commercial refrigeration, home and farm freezers, and air conditioning have worked hard to avoid blanket limitations—through advertising and private presentations. Much more needs to be done for "our side," however, before the refrigeration industry can plan ahead with full confidence.

Tentatively, we can predict that in 1952 such items as water coolers, home refrigerators, and display cases might be held down to 1949 figures (which were mighty good); that freezers ought to pass the half million units mark; that industrial refrigeration and air conditioning should establish new records, and that condensing unit production (above fractional horsepower) will proceed at its present pace.

Twelve months from now it isn't unlikely that shortages of key materials could turn into surpluses and glut. At that point, engineers have thought ahead and designed products which will make present owners unhappy and restless, may be pearls without price. And the great burden of sustaining employment and profits will fall upon advertising, selling and promotion departments.

By late 1952 or early 1953 our military establishment ought to be so impregnable, and our productive capacity so overwhelming, that the possibility of World War III should—like old soldiers—fade away. Thereupon the emphasis will be upon advertising, selling, and designing once more. To move the products of our handily enlarged factories into a pulsing economic bloodstream, and to pay tremendous taxes, *imagineers* will be needed.

## FRUIT STORAGE Air Conditioning System Holds 90-93% R.H. for Apple Storage

ST. THOMAS, Pa.—An outstanding feature of the fruit storage plant recently erected here by Gillan Bros. is an air conditioning system which provides what is termed "a remarkably high relative humidity, especially when it is remembered that for the long-term storage of apples the temperature must be near freezing."

The Gillan family operates a large fruit farm along the Lincoln highway just west of St. Thomas. Six hundred of the farm's more than 700 acres are in apples and peaches.

Measuring 130 ft. 8 in. by 110 ft., the storage building has a total volume of about 115,000 cu. ft. It holds around 40,000 bushels of fruit in three rooms.

Walls consist of 4 in. of brick, 8 in. of cement blocks, and 4 in. of corkboard. The ceiling is also insulated with corkboard, although the concrete floors are not.

After the loading and cooling period, the temperature is maintained at 32-33° dry-bulb and the relative humidity at 85%, day and night throughout the season. The equipment has proved capable of holding relative humidities as high as 90 and 93%, "a record for this class of work," according to the Frick Co., whose system air conditions the building.

Each of the three rooms has its own air conditioning unit, fan, and set of ducts. With the equipment located in the center of the building, the duct work is short and there is little heating effect in it.

By a convenient arrangement of doors and compact "hallways," any one of the air cooling units and fans can be made to serve all three rooms. In the same way, all three of the cooling systems can be connected to one room if required.

Below each air unit is a brine pan. The level of the brine in all the pans is kept uniform by equalizing connections; small pipe lines from the pumps distribute the brine to the various tanks to keep all the liquid at the same concentration.

Two Frick ammonia compressors, one 6 by 6 and the other 5 by 5, carry the cooling load. Both machines operate at 400 r.p.m. and both are equipped with unloaders. V-belt drivers are run to motors of 30 and 20 hp., respectively.

The machines discharge into an evaporative condenser, the water for which, is pumped from a 40-ft. well by a 120-gal. capacity Weinman pump located alongside a pit in the machine room. The same pump furnishes water to the jackets of the compressors.

The three cooling coils are of a special VW design, are galvanized throughout, and are equipped with horizontal accumulators and float-valve controls. Brine is circulated by three Weinman pumps.

One of the three air fans is driven by a 10-hp. motor; the others by 5-hp. motors. Also used are three sets of Minneapolis-Honeywell humidity controls and indicators, plus the necessary relays, back-pressured valves, cut-outs, and safety devices.

## Infra Insulation, Inc. Adds New Types of Aluminum Insulation to Line

NEW YORK CITY—Infra Insulation, Inc., has added several new items to its different types of multiple accordion aluminum insulation.

Recognizing that a significant saving can be made in many building projects where some less than 16-in. center spacing is to be found, the company is now offering Infra Type 6, Type 4, and Type 2 for 12-in. centers in addition to the standard 16 in., as well as Retardive insulation for 8 in., 16 in., and 24-in. centers.

Where in-between widths are needed, one has merely to fold over one or more of the accordion pleats, thus making this ingenious insulation narrower. It can easily be made wider, any width, by stapling two or more pieces of insulation together.

Another innovation is the making of 1,000 sq. ft. of the Type 4 insulation for 16-in. centers in one continuous piece, 750 lineal feet. The one 24-in. insulation strip of 1,000 sq. ft. is 500 lineal feet. It can be cut with a shears or snips as it is needed, by gradually unfolding the entire 1,000 sq. ft. from one small carton 3 1/4 ft. by 1 1/2 ft. by 1/2 ft., less than 1 1/2 cu. ft. in all.

Type 6-24 in. is a new line which is available for wider spacing of building units than the conventional, and is used in ceilings and roof spaces. Type 4-24 in. has always been produced.

Type 6 Infra provides 6 full reflective surfaces and 6 full reflective

spaces. The reflective surfaces consist of 3 sheets of tough, low-emissive aluminum, separated by partitions of a special formula fiber which is mold and vermin resistant and will not support flame. The structure is automatically established as the insulation is unfolded and stapled in place. It is an integral part of Infra, including the reflective spaces. Similarly, Type 4 provides 4 reflective surfaces and 4 reflective spaces.

## NCRSA Plans 2 Surveys, New Directory Edition

PHILADELPHIA—Current activities of the National Commercial Refrigerator Sales Association include a survey now being made on types of insurance being carried by members, according to Marie H. Lawton, executive secretary.

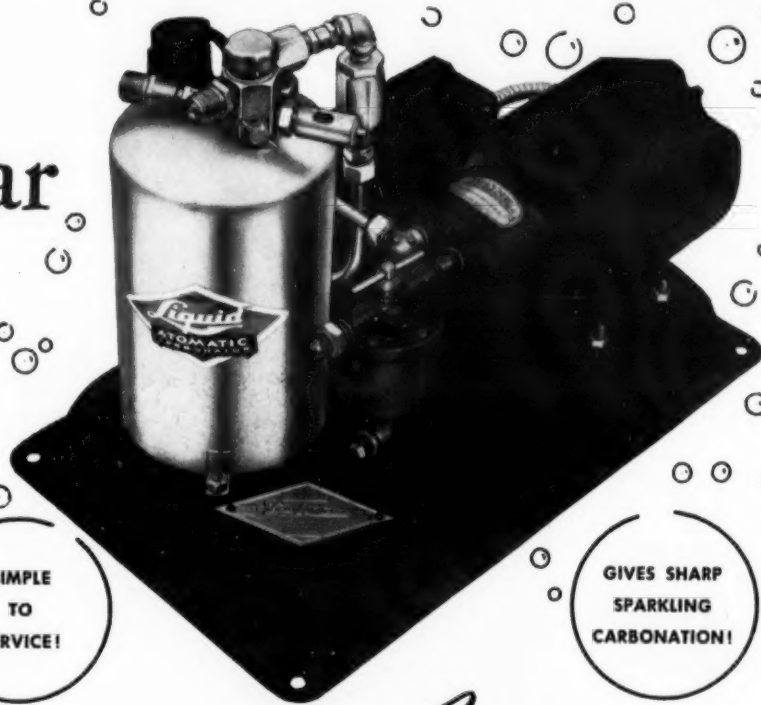
This survey is expected to show how some members have reduced their costs for insurance.

Another survey recently completed covers policies of the industry in compensating servicemen for sales of compressors or other large units, display equipment, and parts.

Four more distributors recently joined NCRSA, it was announced. They are: Hub Refrigeration & Appliance Co., Hattiesburg, Miss.; J. P. Pfeiffer & Son, Inc., Baltimore; Phillips-Summerlin Refrigeration Corp., Alexandria, La.; Fixture Mart, Inc., St. Louis.

Because of the number of new members that have joined the association since its membership directory was issued last October, NCRSA is planning a new edition. All distributors and manufacturers will be listed.

# Sell today's most popular carbonator!



## THE NEW Liquid Automatic TRIPLE-ACTION Big Profits in it for You

**Reasons Why the ATOMATIC is Tops in Performance . . . and so Simple to Service:**

**PUMP**—Direct drive turbine. Pump and motor are contained in same compact housing. Stainless steel motor shaft is also the impeller shaft. No belts, gears or sprockets drive the pump.

**CARBONATOR BODY** is solid 16-gauge stainless steel. Welded fittings form single unit to withstand 1,000-lb. pressure.

**WATER LEVEL CONTROL** is positive action electrode type. Starts and stops the carbonator automatically.

**CHECK VALVES**—Two automatic, self-flushing valves prevent a back flow of gas into pump and water line. Two pumps mean double security.

**COMPACT**—Unit measures only 21 1/4" long x 13 1/4" wide—14 3/4" high. Small enough to fit under sink section of fountain.

**BASE**—16-gauge drawn bonderized steel with baked enamel finish. Resilient motor mounting minimizes vibration.

It's the sensation of the century—in fountains, restaurants, drive-ins, roadside stands all over this land! Every user is finding the new ATOMATIC carbonator to be the practical, low-cost answer to carbonation needs—better in every way . . . silent, compact, efficient, and with capacity to spare.

You can sell the ATOMATIC—this newest product of the world's largest soda fountain manufacturer. Liquid has a service-dealer arrangement for service men who can cash in on the big replacement market. Be posted . . . write for full information—and a copy of the complete service manual—both yours for the asking.

**THE LIQUID CARBONIC CORPORATION**  
 3110 South Kedzie Avenue, Chicago 23, Illinois

**THE LIQUID CARBONIC CORPORATION**  
 3110 South Kedzie Ave., Chicago 23, Illinois

I would like to know about the new Automatic Carbonator.

☐ Please send descriptive leaflet and Service Manual.

☐ Also send sales proposition.

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Company \_\_\_\_\_

Address \_\_\_\_\_

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#### MORE INFORMATION?

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on "What's New" Page  
of this issue  
Use Key No. for fastest service.

## 'Hob-Nob' Shows Open New Appliance Dept.

COLUMBUS, Ohio—Two shows by the cast of WBNS-TV's "Home-maker's Hob-Nob" program helped boost attendance at the formal opening of Morehouse-Fashion Co.'s television, radio, and appliance department in a new fifth-floor location.

Staged at 2 and 7 p.m. on a recent Monday by the full cast of the program, the impromptu shows were patterned after the regular "Hob-Nob" television presentation.

The public was invited to meet and talk with members of the cast. Each guest was also given a "Hob-Nob" souvenir.

The new appliance center is the company's latest step in a store-wide remodeling program. Newspaper advertisements announcing the opening stressed the department's wide aisles and the fact that each appliance is in its own grouping "so that you can shop and compare with speed and ease." "Special opening-day values" were featured.

## Chinese Puzzle: No Space, No Water, and Low Voltage Are Opposing Checkers; Two Bookcases Win Game

HONG KONG, China—Ever play Chinese checkers with air conditioning units?

That is practically what Dodwell & Co., Ltd., Frigidaire distributor here had to do to cool the general offices of A. S. Watson & Co., Ltd. in Hong Kong's Gloucester building.

Here are some of the aspects of the puzzle that C. L. Salter, Dodwell air conditioning salesman, had to untangle before he made the sale:

The company's general offices consist of an enclosed veranda and a large room packed with desks, bookshelves, and other paraphernalia. Room and veranda are connected by four doorways equally spaced across the width of the room.

There is no room for a remote unit. Watson & Co. is so crowded for floor space that if any more were available it would add more badly needed bookcases. The company will permit the installation of only two window units on the veranda. Eight tons of air conditioning is needed.

On top of this, there is no water supply and the voltage is low.

The problem then, as Salter summed it up, is to design an air conditioning system for the office, operating on low voltage, without water, and occupying no floor space.

This is how Salter solved this problem.

He installed two ARL-100 Frigidaire window units in the windows of the veranda where permitted. He then built two bookcases and set them up in the two outer doorways connecting the general office with the veranda.

On top of each of these cases, he mounted a tier of three AR-100 units.

Inlet and exhaust air ducts equipped with powerful fans were attached to each unit and run across the ceiling of the veranda to the outside. Acme adjusting transformers were installed on each of the six units used in the tier arrangement to insure that they operated on the correct voltage.

"The complete installation works exceptionally well," Salter commented.

## Song Naming Contest Ups Sales to All-Time High

CHEYENNE, Wyo.—A "name the song" contest staged by Jack's, local appliance dealership, pushed sales to an all-time peak.

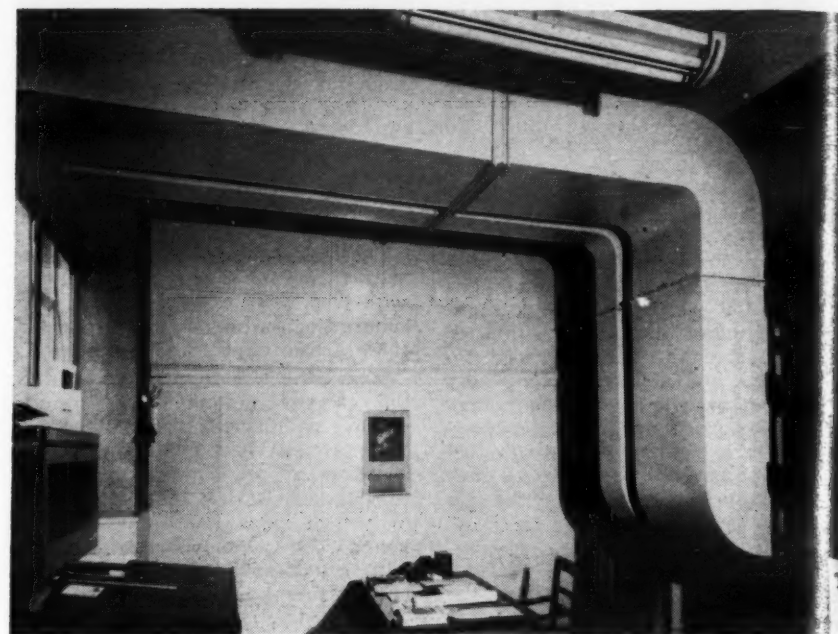
The contest was announced in an advertisement which contained eight cartoons, each representing a popular song. The public was invited to compete for prizes by identifying the tunes.

The first four prizes were major appliances—a refrigerator, range, washing machine, and radio. In addition, checks good for \$50 on any major appliance in the store went to the next 200 winners. Prizes were awarded on the basis of accuracy and originality of presentation.

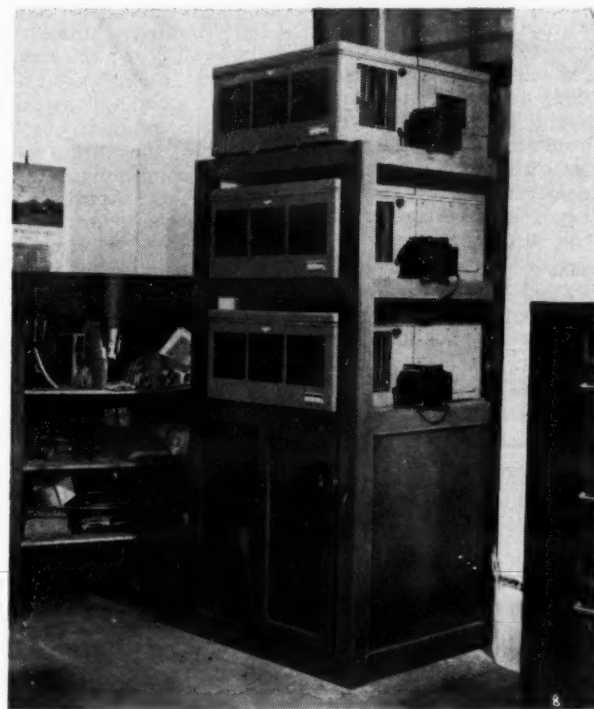
Irvine Crown, head of the Crosley and Philco dealership, described himself as "absolutely floored" by the response to the contest. Only a mild reaction was expected from the public.

"Instead," Crown said, "we had more than 10,000 entries in the space of three weeks and the number of people brought into the store exceeded all previous records."

As a result, the firm enjoyed its biggest sales month in the past five years and set a new high in both refrigerator and automatic laundry equipment sales, according to Crown. He said the store plans to duplicate the contest on a regular basis.



Air ducts equipped with powerful fans carry inlet and exhaust air from units to outside.



Tier of three window-type units built over bookcase solved space problem in crowded Hong Kong office.

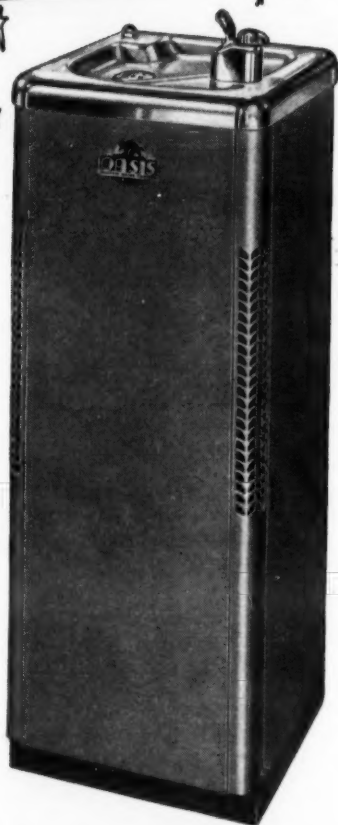
# Only OASIS has these 3 big selling features!

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"Double the Drinks"

Quieter Cooling

TODAY'S  
"BEST-SELLING"  
WATER COOLER  
FEATURES



**Oasis Fountain—Smoother Drinks!** Serves a smooth, even-flowing, drinking stream at all times, regardless of fluctuations in local water pressure. No spurting, squirting, spouting.

**Oasis Pre-Kooler—More Drinks!** The improved Pre-Kooler makes it possible to serve twice the number of drinks in a given time. Gives two drinks for the price of one.

**Oasis Fanless Condenser—It's Quieter!** The only nationally-advertised water cooler with a Fanless Condenser—no fan or fan motor to cause noise, hum, or vibration.

**2,400,000 Thirsty People** see Oasis national advertising in TIME and NEWSWEEK magazines. Pow-

erful direct mail helps you make this advertising pay off.

Free catalog gives full details on the complete Oasis line—an electric water cooler for every customer's need. (Also, get the facts on the Oasis Air Drier—it stops moisture damage.) The EBCO Manufacturing Co., 409 W. Town Street, Columbus 8, Ohio.



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ELECTRIC DRINKING WATER COOLERS

## YOU CAN'T BEAT THE VICTOR DISPLAY CASE LINE

- Every type of display case.
- For Meats, Vegetables, Fish, Delicatessen and Dairy Products.
- Self-Service and conventional cases.
- Variety of sizes and endless models for any store layout.
- Economical and Efficient.
- Displays that Sell.



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MANUFACTURERS OF THE FAMOUS VICTOR QUICKFREEZE

PRODUCTS CORPORATION • HAGERSTOWN, MD.



"But there isn't any  
shortage, Mr. Biltz—I still  
have Ranco Controls!"

There's no need to fuss around with makeshift refrigeration controls—when you can rely on Ranco Replacements. Today there is a Ranco control for almost every refrigeration job, whether you're working on a domestic refrigerator, water cooler, milk cooler, or commercial installation.

Already the world's largest manufacturer of refrigeration controls, Ranco has increased plant capacity to assure you of the controls you need—to make sure we can fill your orders for dependable Ranco controls.

Stumped on what control fits what? This book—at your Ranco wholesaler's—will answer your questions in a jiffy.



**Ranco Inc.**  
COLUMBUS 1, OHIO



WORLD'S LARGEST MANUFACTURERS OF REFRIGERATION CONTROLS





GYMNASIUM of new clinic in Detroit for rehabilitating victims of polio and other diseases is kept cooler than rest of structure.

## Air Conditioning Speeds Rehabilitation

### 15-Ton Year-Round System Adds to Pleasant Atmosphere of Detroit Clinic

By C. Dale Mericle

DETROIT—Physical rehabilitation of polio victims and those suffering from other neuro-physical difficulties is achieved under more pleasant conditions in a new private clinic here, thanks in part to a 15-ton year-round air conditioning system.

Believed to be one of the largest such private clinics in the world, the Detroit Institute of Physical Medicine & Rehabilitation fulfills an ambition of many years for Dr. M. K. Newman, who heads the clinic. Dr. Newman, incidentally, has done considerable research on the application of refrigeration to medicine.

The ultra-modern architectural design and styling of the one-story structure is not only attractive, but very cheerful, offering a psychological boost for both patients and staff. Air conditioning, too, contributes to this effect.

To meet the requirements for this job, Radco Refrigeration, Curtis distributor in Detroit, laid out and installed a four-zone year-round system. It supplies conditioned air not only to the various treatment rooms and offices of this clinic, but also to the quarters of two dentists and another doctor who rent space.

In addition, the Detroit Cerebral Palsy Clinic, which is temporarily

occupying the north section of the building, is served by the main air conditioning system.

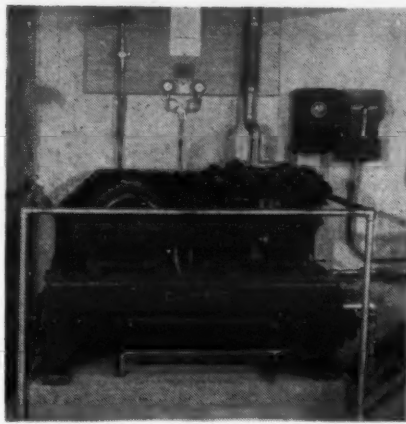
Summer cooling for the clinic is obtained from a 15-ton Curtis condensing unit supplying a large Kenard coil in the supply air plenum. This machine is located in the partial basement with the air-handling equipment and a Jackson & Church model CC-800 oil-fired furnace rated at 800,000 B.t.u./hr.

Fresh air in the amount of 25% is supplied to the system, which provides four zones for heating or cooling. Each zone is controlled by a Barber-Coleman thermostat actuating an on-off damper motor in the supply duct for each zone. These are located just beyond the coil. Total capacity of zones is 4,000 c.f.m.

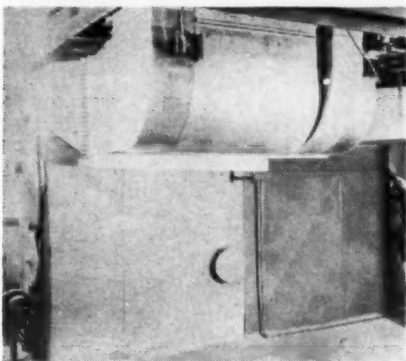
Toggle switch on each thermostat permits manual change-over from summer to winter operation.

One complete zone consists of the large gymnasium filled with apparatus and special equipment designed to speed this rehabilitation work. This particular zone is usually kept at a slightly lower temperature to help stimulate physical activity.

Largest of the four zones takes in the entire central section of the clinic, which includes several rooms



15-TON Curtis condensing unit in basement supplies cooling for year-round system.



AIR-HANDLING equipment for clinic.

which provide for specialized treatment of the patients. Attractive lobby and waiting room are served by this zone, also.

The third zone supplies offices and treatment rooms on the northeast corner of the building, while the fourth handles the north section occupied by the cerebral palsy clinic.

## Built-In Profit Maker

### Walk-In Cooler Substitutes as Wall, Boosts Beer Sales of Denver Drugstore

DENVER — Beer sales increased substantially after Malone Drug Co. here replaced a wall separating the stockroom from the front of the store with an unusual walk-in "display" refrigerator measuring 8 ft. long and 3½ ft. wide.

John Malone, owner of the store, has long realized the excellent merchandising possibilities of a display refrigerator for beer and other beverages.

However, due to the small size of the store, none of the standard walk-in refrigerators with glass reach-through doors would fit in, without serious crowding of other sections.

The only space available was that occupied by the dividing wall, 8 ft. long and 8 ft. high, at the right-rear of the store.

When Malone called in Ludwig-Patterson Co., Denver refrigeration contracting firm, the answer was found in a custom refrigerator tailored to occupy approximately the same space as the wall, serve as a partition between stockroom and store, and still provide ample space for beer.

The box occupies a space only 2 ft. wider than the original wall, but maintains the same dimensions lengthwise.

The white refrigerator has two 26-in. by 36-in. doors at the front. Behind them are four tiers of blond hardwood shelving.

A narrow door at the left end forms the side of the doorway to the stockroom. It is wide enough to permit one man to slip in sideways and stock cases of beer beneath the shelving and to arrange displays of beverages.

A 1-hp. condensing unit in the basement serves the display refrigerator.

### Ben Rist Named Sales Mgr. For Heat-X-Changer Co.

BREWSTER, N. Y.—Recently announced by Cecil Boling, president of Heat-X-Changer Co. was the appointment of Ben W. Rist as sales manager.



Ben W. Rist

Rist, who will make his headquarters at the general offices of the company here, has been Midwest manager for the past two years with offices in Chicago. A graduate of Iowa State college, Rist was formerly associated with the Fred C. Kramer Co., refrigeration wholesaler of Chicago, and with the Alco Valve Co. as field engineer in both Chicago and New York territories.

# HENRY

really gives you something extra

a few of many outstanding advantages

**IN PACKLESS VALVES**, still the only Balanced-Action valve on the market—no extra cost

**IN STRAINERS**, forged brass end caps with integral fittings, reinforced screen, large filtering area, distortion-proof clean-out flange

**IN DRIERS**, forged brass end caps with integral fittings, natural finish, Abso-Dry pressure sealed, dispersion tube and extra capacity

**IN WING CAP VALVES**, greater flow, bolted bonnet and self-aligning stem disc

**IN RELIEF VALVES**, diaphragm construction, positive controlled cushion reseating with relief capacity that meets latest code requirements

**IN AMMONIA VALVES**, compact and strong, self-aligning stem disc

**IN ALL HENRY PRODUCTS—ADVANCED FIELD-PROVEN DESIGN AND CONSTRUCTION**

Sold by Leading Wholesalers

**HENRY VALVE CO.**



Valves • Driers • Strainers • Control Devices and Accessories for Refrigeration, Air Conditioning and Industrial Applications

MELROSE PARK, ILL. (CHICAGO SUBURB)  
CABLE: HEVALCO, MELROSE PARK, ILLINOIS

## PRESSURE DROP

is important

Excessive pressure drop through a poorly designed heat interchanger can offset all the gain to a system and do more harm than good. Exclusive longitudinal fins in all Heat-X interchangers provide for low pressure drop and high heat transfer, resulting in improved expansion valve performance, lessening of oil foaming troubles, and many other advantages contributing to a more efficient installation.

## heat-x HEAT INTERCHANGERS

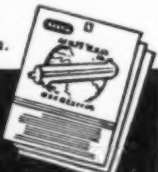


¼ to 10 TON interchangers are of the cast aluminum type with highly efficient longitudinal suction-line fins. Sized to match condensing units.

15 to 100 TON models of the shell and finned tube type are also constructed with exclusive Heat-X longitudinal fins providing maximum heat transfer at minimum pressure drop.

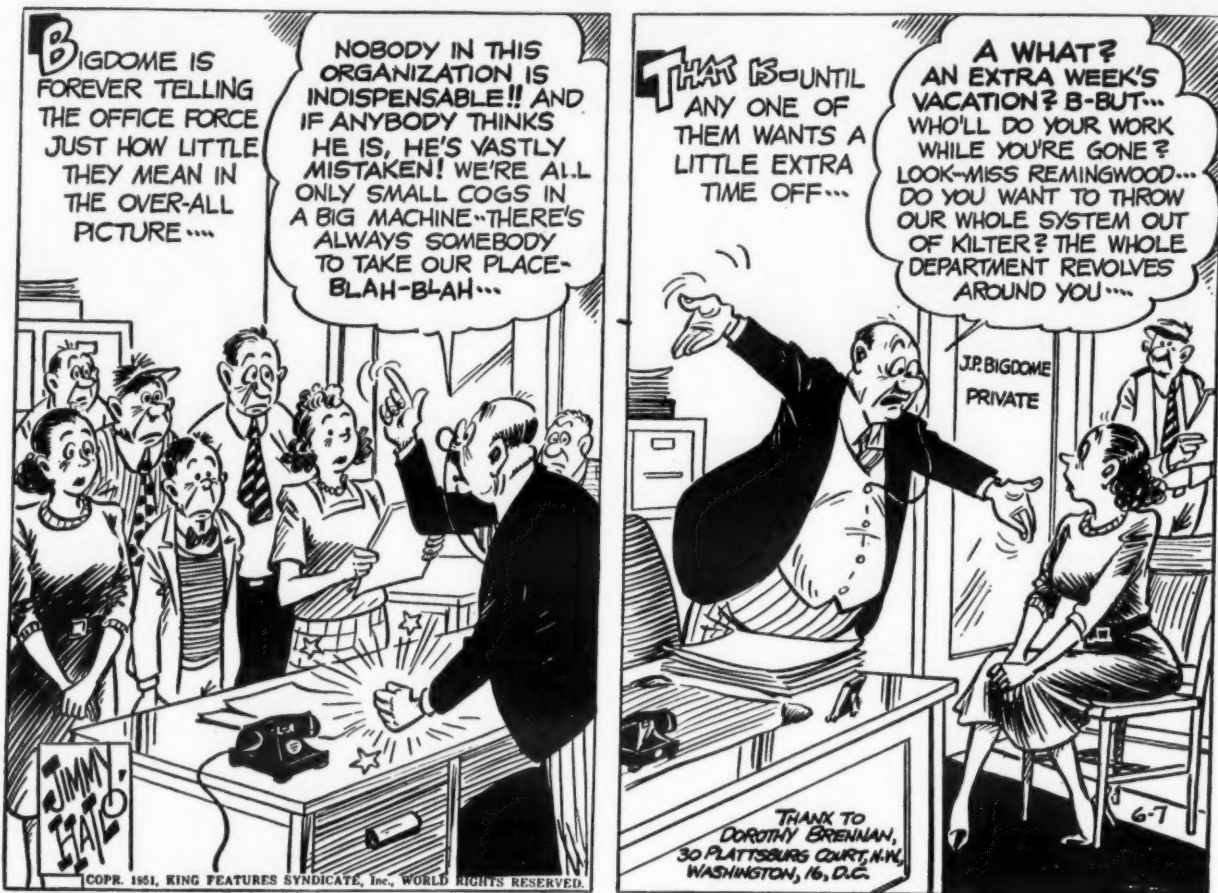
Write today for specifications and installation data.

**THE HEAT-X-CHANGER CO., INC.**  
BREWSTER, NEW YORK





## They'll Do It Every Time . . . . By Jimmy Hatlo



## Do You Have 'Both Feet On The Ground'?

**BIG** INSIDE . . .  
**COMPACT** OUTSIDE  
**PROFITABLE** ALL-AROUND!

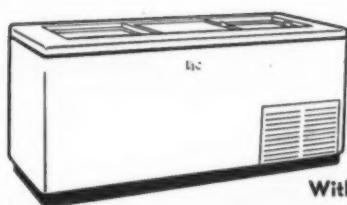


You'll find big-case capacity built into the compact frame of Brewer-Titchener's DC-16 Display Case. Little wonder that this smartly-styled cabinet is among the most popular in the BTC line!

**SO MUCH STORAGE SPACE** 16 cubic feet of storage in a floor area only 76" by 28" — thanks to BTC's new vapor-sealed insulation!

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"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—Charles A. Dana.

## How To Guard Against Sabotage

"The greatest defenders against sabotage are the loyal American workmen who are producing the materials and weapons for our defense. They can be the 'watchdogs' of defense in every walk of life."

J. Edgar Hoover uttered that interesting quotation.

FBI men, we know, are doing a great job of tracking down spies and saboteurs. But they can't be everywhere. Workmen can, though. And managers should be watchful, too. Every person connected with a factory in our industry can be a "minute man."

If you don't know how to foil saboteurs, here are some things you can do to help your country, as suggested by a pamphlet called "Sabotage—How To Guard Against It" put out by the National Foreman's Institute:

1. Keep a close watch during working hours as to the state of your tools, equipment, and machines for any sign of tampering.
2. Make an immediate report to your superiors of any act which you consider suspicious or harmful to plant production.
3. Never accept gifts or money from strangers. Even though you may not be responsible for any act of sabotage which might be committed in your plant, the fact that you accepted a "bribe" might come to light during the subsequent investigation. Then you'd have a lot of explaining to do.
4. Take all grievances to proper authorities. Never air them vocally in the plant or outside. Enemy agents have their ears turned for restlessness, and will pounce on any complaint. They'll pervert it into an opening wedge for a rebellion.
5. Don't talk to strangers. Walls have ears. Gossip and rumors are the tools of the saboteur. Beware of the friendly fellow who wants to know all about your job. Communists prefer to work through willing or unsuspecting workers, because the latter remove them from the risk of detection and arrest.
6. Be alert to the introduction or substitution of inflammable materials or liquids into your production lines.
7. Make it your job to see that all inflammable materials are disposed of properly. (Arson is a familiar weapon of Communists). See to it that fire exits, fire escapes, and all escape points are kept clear.
8. Don't allow yourself to become excited by so-called "pacifist" groups. Remember that Communists love to work behind "help the underdog" organizations. Distracting your attention from your job is equivalent to ruining a machine in the Communist Manual of Duties.
9. The FBI is interested in receiving FACTS—not rumors or opinions. Feel free to furnish all facts in your possession. The FBI is as near as the nearest telephone. The first page of every telephone book in the country lists the nearest office of the FBI.

Don't think the urgency of providing tips doesn't apply to YOU because you are not working on defense production. The saboteur may THINK you are.

He, not you, decides when and where to throw a monkey wrench in the works.

If you need further incentive to remain on the alert, please remember that it is your own life, job, and income you are protecting!



## Self-Contained Packaged Conditioners...

### 6 Main Markets and Reasons Why They Buy; 8 Steps In Making Sales Given by Thatcher

DETROIT—The six main markets for self-contained packaged air conditioning units and why they buy were outlined here recently by "Pete" Thatcher, sales promotion manager for the Baker Refrigeration Corp.

Thatcher also spelled out the eight steps to making an air conditioning sale.

The six main markets he described were:

1. Stores and shops, such as dress shops, shoe stores, drugstores, and jewelry stores.
2. General offices including industrial, commercial, professional offices, and drafting rooms.
3. Restaurants and bars.
4. Recreation centers such as bowling alleys, club rooms, and small night clubs.
5. Miscellaneous markets, such as art galleries, banks, and barber shops.
6. The home, where air conditioning can be connected on to the existing warm air heating system.

Thatcher listed 15 general customer benefits from air conditioning that are more or less familiar and then pointed out specific benefits derived by some of the particular markets he mentioned.

For instance, the dress shop receives these five benefits:

1. Customers like to try on dresses when the shop and fitting rooms are comfortable.
2. It is easier to get the customer into the fitting room where the sale is actually made.
3. Less spoilage from try-ons.
4. Clerks have personal clientele—helps hold clerks and therefore customers.
5. Less spoilage from dust and dirt in the air.

As another example, the jewelry store gets these benefits:

1. Permits brilliant lighting because of heat absorption.
2. Luxuries are more easily sold in comfortable surroundings.
3. Less tarnishing of silver.

In the office market, he noted that for the industrial office, air conditioning overcomes the usual dirt, noise, and disadvantage of factory location near railroads, boiler houses, etc., and provides a cleaner, better place to work.

In the recreational field, bowling alleys benefit from air conditioning by extending their season, preserving alleys and pins, and allowing less resurfacing of alleys and less general maintenance.

After pointing out the vast markets awaiting the air conditioning salesman, Thatcher turned to the specific steps of the salesman's job. These are:

1. Finding the prospect.
2. Paving the way.
3. Making the sales approach.
4. Selling the need.
5. Making the survey.
6. Selling the product.
7. Giving assurance.
8. Closing the sale.

There are a number of ways to find prospects, but Thatcher pointed specifically to the neighborhood bank; the utilities; present users; friends and acquaintances; architects, contractors, and builders; building permits and Dodge reports; telephone and business directories; members of various clubs such as Rotary and Kiwanis; names of high priced car buyers from the local registration office; and mailing lists of larger income tax payers.

To pave the way, Thatcher sug-

gested that the dealer use the advertisements that help him find and sell prospects. He pointed out that direct mail was the cheapest, most direct, and most efficient way to get inquiries. He admitted that newspaper advertisements were good, though a large share of the newspaper's circulation does not reach the logical prospects.

In making the sales approach, Thatcher said salesmen should learn all they can about the prospect's hobbies, friends, and motives in buying. Where possible, he urged, have an old friend or customer introduce you by letter, telephone, or personally.

Then sell these needs, appealing to his particular buying motive whether it be personal gain, convenience, pride, affection, or safety:

1. Greater comfort.
2. Better health through fewer colds, less fatigue, or hay fever and asthma relief.
3. Greater efficiency through more production and fewer absentees.
4. Maintain competitive position with competitors already equipped.
5. Economy through reduced cleaning, decorating costs, and spoilage.
6. A more profitable business.

When making the survey, Thatcher said salesmen should have the necessary forms with them and be familiar with the method of unit selection. He warned them to insure against these common pitfalls:

1. Not balancing the exhaust fan load (restaurant odors).
2. Not providing enough ventilating air.
3. Accepting from the customer a false occupancy load. He may give a low figure to keep costs down, a high one through overrating his business, or an inaccurate one because the high occupancy does not occur during the peak sun load.
4. Insufficient water at the unit. Watch for these things: Pressure, size of connections, meter and drainage facilities. Is a new water service required?
5. Availability of power. New service may be required.
6. Location of outside air intake.
7. Accessibility of unit for service.
8. Air intake blocked now or likely to be blocked.
9. Best place to put the unit for economy of installation.
10. Proper air distribution: length of blow, air quantity, position of vanes, ceiling height, number of outlets.
11. Try to give the best job possible, it pays later on.

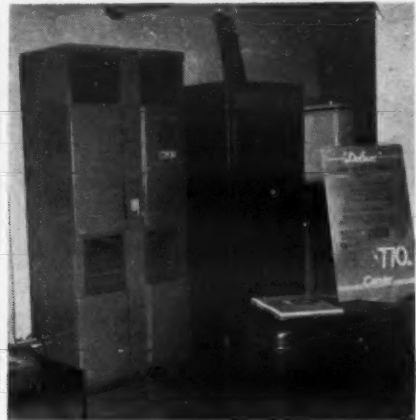
For selling the product, Thatcher advised salesmen to have a folder on the product with them. He said they should know every part and its function and the material of which it is made.

The salesman should show the customer how it works, point out the features and customer benefits, and repeat them often in new ways. He should also know all he can about his competitor's equipment so that he can stress the advantages of his own.

Giving assurance, Thatcher declared, consists of appealing to pride of ownership, having a list of users, showing testimonial letters, including a list of large installations, taking the prospect to see other satisfied customers (let your old customers sell for you), and selling the experience, ability, and service facilities of your own organization.



SIGNS SELL, especially when they carry the full story on the product as do these in the showroom of Stevens, Inc. in Hutchinson, Kansas.



## Signs Seen as Silent Salesmen by Dealer Who Puts Them on Each Packaged Unit

HUTCHINSON, Kans. — Signs carrying a complete sales story act as silent salesmen for the packaged air conditioning units displayed in the new showroom of Stevens, Inc. opened here recently.

Stevens, Inc. is an old dealership that handles a wide variety of heating and air conditioning equipment including such brands as Carrier, Brunner, Servel, and General Electric. The company recently remodeled an old feed mill on Hutchinson's main street into a modern three-story 45,000-sq. ft. building.

The structure includes ample space for storing heavy equipment, a sheet metal shop, and supplies of refrigeration supplies and replacement

parts, in addition to the showroom for packaged air conditioning units.

This showroom is located in the right rear of the building. On display are units ranging in size from 1/2 hp. to 10 hp. Atop each is a "selling sign" which may contain as many as 25 sentences.

Information given includes features, cost of installation, selling price, time-payment schedule, area it can cool in square feet, and approximate operating cost.

"The selling signs have proven one of the wisest merchandising moves we have ever developed," Harry Stevens, president of the firm, declared.

He pointed out that the informa-

tion was valuable not only to prospects but was of great assistance to the salesmen in giving out accurate information about the units.

Stevens has a staff of four qualified refrigeration engineers, who are the only representatives of the firm to leave the store on selling jobs.

The firm claims to be one of the oldest Carrier dealerships in the midwest, being franchised in the early 1920's. It has found a considerable home market for air conditioning among well-to-do wheat farmers in this area. Some home jobs have run as high as 20 tons of refrigeration, Stevens asserted.

**longer life...**

*Jarrow*

Refrigerator Door Gaskets

Always Demand These Quality Gaskets

**JARROW PRODUCTS**

420 N. LA SALLE ST., CHICAGO 10, ILLINOIS

**More sold this year than ever before**

**BRUNNER**  
SINCE 1906

**AIR CONDITIONING**

# This is AIR CONDITIONER Weather and your last chance to CASH IN!

**These are your customers.** Restaurants, taverns, theatres, grocery and meat stores, clothing stores and practically all the other retail trades *plus* business offices and manufacturing plants.

**Contact them by personal call or telephone.** Let them know you are in position to make immediate installation of a famous BRUNNER Self Contained Air Conditioner in the correct capacity to fit the requirements of their place of business.

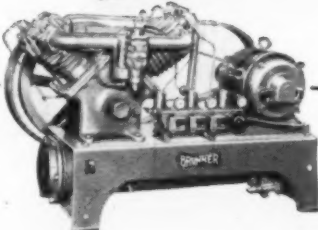
**It has been proven time and again.** An air conditioner will pay for itself in the extra business attracted and in a host of other ways. Illustrated Brunner literature will give you the entire story.

**Your last chance for extra summer season profits.** Only a limited supply of these BRUNNER Self Contained Air Conditioners is still available in all sizes for immediate delivery. No air conditioner has a finer reputation. They are priced right and good looking too. Make simple water and power connections and they go to work.

**BRUNNER MANUFACTURING COMPANY**  
UTICA 1, NEW YORK, U. S. A.

★ **Distributors** — If your floor stock has been depleted, phone us for replacements. We want to do everything possible to prevent disappointments this year through unfilled orders.

★ **Dealers and Service Shops** — Let the factory or your regular Brunner distributor know at once your anticipated needs so we can provide units in the desired sizes.



**REFRIGERATION CONDENSING UNITS by**  
**AIR AND WATER COOLED MODELS—a size and type for every purpose...1/4 HP. TO 75 HP.**



## AIR CONDITIONING

- Self Contained 3 HP. to 10 HP.
- Remote Type 3 HP. to 75 HP.

Completely Brunner built... backed by a fine reputation forty-five years old.

## EVAPORATIVE CONDENSERS

by **KRAMER**

- Time Tested
- No Rusting
- Trouble-Free Operation

WRITE FOR BULLETIN R-162

**KRAMER TRENTON CO. Trenton 5, N. J.**

2 TO 10 TON CAPACITY



## Gor't Study Indicates:

# It's Average Storage Temperature, Not Fluctuation, That Determines Life of Products In Frozen Storage

COLLEGE PARK, Md. — "Very little definite information or actual data can be found in support of the much-repeated statement that fluctuating temperatures harm the quality of frozen foods. In many cases, the statement is undoubtedly based on hearsay and has been passed along for many years.

"The average storage temperature encountered during the fluctuations would seem more likely to be the deciding factor" than the fluctuations in themselves, according to results of studies on frozen fish fillets, indicates S. R. Pottinger, chemist with the Fish and Wildlife Service of the U. S. Department of the Interior.

This does not mean that temperatures can be disregarded in the storage of frozen foods, nor that temperatures much above 0° F. are satisfactory for long-term storage.

Striped bass fillets held at -10° F. and at 0° F. were in good condition for eight to nine months while three months was the limit of their storage life at 15° F., Pottinger points out.

Those, however, which fluctuated between -10° and 0° received as satisfactory and nearly identical palatability scores as the fillets held constantly at -10° or at 0°. And at the higher temperature range, the frozen fillets fluctuating between 0° and 15° received slightly better scores than those held at 15°. The latter were unsatisfactory after only four months, but the others were.

"Some of the causes of fluctuations are: using storage rooms for freezing; overloading of the refrigeration equipment; power failure; equipment breakdowns; improper setting of the control devices; transferring frozen products from one storage room to another; and transporting frozen products from producer to consumer," Pottinger suggests.

"Considering the number of opportunities for the temperature to change, it is quite possible that some products may undergo a series of fluctuations in temperature before reaching the ultimate consumer."

### General Misconception

As with other products, it has been a "generally accepted and frequently repeated statement that fluctuating freezer storage temperatures are detrimental to the quality of frozen fish. There is, however, very few, if any, data in the literature to support this idea," states Pottinger.

Thus this series of tests was run off, using striped bass to represent non-fatty fish and Boston mackerel as the fatty type. Fat in fish is very susceptible to oxidation and often undergoes rapid changes during frozen storage, it was explained.

Both varieties of fish were immediately filleted upon arrival at the laboratory, and after washing and draining were placed in a 35° F. chiller prior to wrapping. Fillets were wrapped in pairs in moisture-vaporproof cellophane. A tight drug-gist's wrap was used on half, the other half being wrapped to permit large air spaces to determine whether temperature fluctuations caused increased moisture and cavity ice or frost formation within the package.

All packages were frozen on plates in a room at a temperature of -15° F. and held there for approximately two days.

"An equal number of packages of both varieties of fish, in tight and loose wraps, were placed in storage at the following temperatures: -10°, 0°, fluctuating between 0° and -10°, 15°, and fluctuating between 0° and 15°," recounts Pottinger.

### Temperature Fluctuation Planned

"As planned originally, fluctuations in temperatures were to occur every four days by moving the fillets from the one temperature to the other. After the first month of storage, it was apparent that the mackerel would have a relatively short storage life. Therefore, it was decided to subject various mackerel samples to additional fluctuations in temperature in order not to discard a large number of unused samples because of poor quality.

"Consequently, fluctuations at three-day and one-day intervals were also maintained as far as possible. But the striped bass fillets were subjected to the four-day cycle only."

Examinations were made at monthly intervals. Besides noting the appearance, conductors of the program arranged palatability tests by a panel of four or five members of the laboratory staff who were experienced at this. The fillets were thawed at room temperature, brushed lightly with vegetable oil, and baked in a pre-heated oven at a temperature of 500° F. for 10 to 12 minutes, depending on the size and thickness of the fillets.

Quantity of "drip" was also determined as were volatile acid numbers.

### Flavor Score Doubled

In rating the palatability, 1 to 10 points each were given for appearance, flavor, and texture, explains Pottinger. The flavor score was doubled to give additional weight to this factor. The mean as a per cent of these scores resulted in the final palatability score. Scores below 85 were considered unacceptable.

Results of the palatability tests on the striped bass fillets are shown in Table 1.

"The tightly wrapped products held at constant temperatures of -10° and 0° F. and at temperatures fluctuating between these two points received satisfactory and nearly identical scores at the end of eight months of storage," according to Pottinger.

"After nine months of storage the

samples stored under this fluctuating temperature range received the same score as those held at a constant temperature of -10° F. At this time the samples held at a constant temperature of 0° F. were not considered satisfactory.

"After only four months of storage at 15° F., the striped bass fillets failed to receive an acceptable score. At the same time, those undergoing temperature fluctuations between 15° and 0° F. were still acceptable. No noticeable surface desiccation had occurred in either lot at this time, and the odor and appearance of the uncooked fillets were satisfactory. The early low palatability scores noted were attributable mainly to adverse changes in flavor and texture."

The Boston mackerel fillets had a significantly shorter storage life (due chiefly to their fatty content) than the striped bass, as the palatability scores given in Table 2 indicate. Despite the shorter life, however, palatability scores follow a pattern similar to that for the bass—that is, fluctuating temperatures had little if any pronounced effect.

Similarly, Pottinger reports, tests for volatile acid numbers and the quantity of "drip" showed insignificant differences between the fillets held at a constant temperature and those that were allowed to fluctuate in temperature.

Table 1—Palatability Scores for Striped Bass Fillets

Storage Temperature	Type of Wrap	Palatability Score —Storage Period in Months—									
		1	2	3	4	5	6	7	8	9	10
-10° F. ....	Tight	99	100	98	90	91	89	90	88	88	82
	Loose	98	100	95	88	84	86	81	82	81	72
Fluctuating between -10° F. and 0° F. at four-day intervals	Tight	98	100	97	89	90	89	89	88	88	83
	Loose	95	100	95	89	87	87	83	83	80	72
0° F. ....	Tight	99	100	98	87	89	87	87	87	84	72
	Loose	98	100	97	86	84	85	78	82	75	75
Fluctuating between 15° F. and 0° F. at four-day intervals	Tight	99	100	97	87	83	81	76	74	74	74
	Loose	98	100	96	79	81	80	80	80	80	80
15° F. ....	Tight	100	100	94	84	81	81	72	71	69	69
	Loose	95	99	95	77	77	77	77	71	71	71

Table 2—Palatability Scores for Boston Mackerel Fillets

Storage Temperature	Type of Wrap	Palatability Score Storage Period in Months				
		1	2	3	4	5
Constant:						
-10° F. ....	Tight	95	96	92	89	86
	Loose	98	95	89	86	78
0° F. ....	Tight	97	96	91	84	81
	Loose	98	96	89	81	76
15° F. ....	Tight	94	89	71	55	55
	Loose	96	90	67	60	60
Fluctuating at four-day intervals:						
Between -10° and 0° F. ....	Tight	97	97	93	84	84
	Loose	97	96	87	80	80
Between 0° and 15° F. ....	Tight	98	95	71	73	73
	Loose	95	92	66	66	66
Fluctuating at three-day intervals:						
Between -10° and 0° F. ....	Tight	*	97	91	88	84
	Loose	*	93	91	85	80
Between 0° and 15° F. ....	Tight	*	91	75	67	67
	Loose	*	91	76	59	59
Fluctuating at one-day intervals:						
Between -10° and 0° F. ....	Tight	*	97	90	85	85
	Loose	*	93	88	86	78
Between 0° and 15° F. ....	Tight	*	90	74	51	51
	Loose	*	84	78	51	51

\*During the first month of storage, these samples were subjected to temperature fluctuations at four-day intervals. The palatability scores for this period are given in the group "fluctuating at four-day intervals."



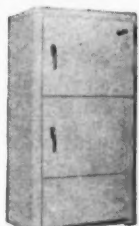
### DRY KOOL BOTTLE COOLER

World famous for performance and design. 14 models to meet all requirements in stainless steel or brown Dulux finish.



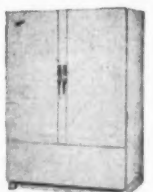
### UPRIGHT FREEZER

15 Cubic Feet  
Scientific placement of cooling coils, two separate food compartments, dual doors to minimize cold loss, insure balanced freezing at minimum cost.



### REACH-INS

Modern flush fronts with recessed handles in popular sizes. Ten models to choose from. Available in white Dulux, stainless steel fronts and glass doors.



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### KUBEMASTER ICE CUBE MAKER

Whenever food or refreshment is served, ice cubes as you need them. Choice of 3 beautiful models.



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By  
**UNITED REFRIGERATOR COMPANY**

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# DETROIT'S PLAN PUSHES YOUR BUSINESS CURVE UP!

DETROIT'S aggressive, hard-hitting advertising plan plugging periodic service checkups has scored a solid success with refrigeration servicemen everywhere. Attention compelling full page DETROIT advertisements appearing month after month in publications covering the drug, meat, grocery, restaurant, dairy and ice cream fields are constantly at work selling more and more users of commercial refrigeration equipment the vital necessity for proper refrigeration maintenance. It's a plan both powerful and practical—designed and working to build new service business, new service profits for you!

## Here's What They're Saying—

**A REFRIGERATION SERVICE ENGINEER STATES:**

"DETROIT'S timely campaign has really taken hold with my customers. More and more of them are interested in keeping their equipment in tip-top shape."

**A PROMINENT WHOLESALER SAYS:**

"As a wholesaler I can certainly report that everyone in my territory is enthusiastic about DETROIT'S plan."

**A MANUFACTURER WRITES:**

"Congratulations on a splendid campaign. It's bound to do a great job for the entire refrigeration industry."

**AS VITAL TO AMERICA AS THE FOOD IT PROTECTS!**

**ASK YOUR DETROIT WHOLESALER FOR YOUR SUPPLY OF "INDUSTRY SLOGAN STICKERS"**

# DETROIT

**LUBRICATOR COMPANY**

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RAILWAY & ENGINEERING SPECIALTIES, LTD.  
Canadian Representatives in Montreal, Toronto, Winnipeg  
EXPORT DEPT.—Box 218 Ridgefield, New Jersey



## Air Conditioning In United Refrigeration's Wholesale Store Has Economy Features

SAN ANTONIO—To provide year-round air conditioning for themselves and also demonstrate to prospects how the equipment works, United Refrigeration had a 15-ton system installed in its new wholesale store here.

Being a distributor of Recold equipment in this city as well as Corpus Christi and Harlingen, United used a Recold air conditioner and evaporative condenser for the job.

The cooling load was calculated at about 14 tons so the equipment selected included a UVT-140 air conditioner with a four-row direct expansion coil split longitudinally into two equal circuits and a single two-row hot water coil.

High sides consisted of two 7½-hp. Copelametic units, model Z-750-FH, operating in conjunction with a Recold evaporative condenser having two equal circuits. Hot water for winter operation is supplied by a Janitrol steel boiler.

To achieve operating economy, the equipment is hooked up as two independent cooling systems, each condensing unit being connected to one circuit of the cooling coil and the evaporative condenser.

During most of the first cooling season, the load was handled by just one unit. This resulted in considerable savings in both current consumed and current demand charges, according to Alex Trevino and Boone Crisp of the firm.

"The current demand charge in this locality is based on the maximum

demand in any ¼ hour in each month," Trevino explains.

Control of the system is provided by a Minneapolis-Honeywell modulating thermostat in the conditioned area. The thermostat controls a modulating damper motor operating face and by-pass dampers. Condensing units are controlled by the damper motor which has end switches connected to the two solenoid valves in the liquid lines running to the split coil.

Evaporative condenser on the job is designed for 78° wet bulb and 100° condensing temperature. Operating head pressures are limited to a maximum of 105 to 120 lbs., and there has been no perceptible scaling of the condenser tubes even though the local hard water is used without treatment.

Operation on the heating cycle has been equally successful, the firm says, even during a spell of cold weather that dropped outside temperatures to 0° F., which was almost 20° below the design temperature for the area.

### UsAirco Appoints 2 Venezuelan Outlets

MINNEAPOLIS—United States Air Conditioning Corp. has appointed P. C. Bousquet G. & Co. and Stolk & Bousquet, of Caracas, as exclusive representatives and distributors of its products in Venezuela.

## Fred Riedel Named Baker Chief Engineer

SOUTH WINDHAM, Me. — Announcement of the appointment of Fred Riedel as chief engineer of Baker Refrigeration Corp. here, was made by Frederick W. Smith, president.



Fred Riedel

Riedel received his technical education at Hochschule Maschinenbauschule, Esslingen, Germany. Before coming to the United States in 1927, he spent five years as a heating and ventilating engineer in Stuttgart, Germany.

His first assignment in the U.S. was as a design engineer for the York Heating & Ventilating Co. Then he joined Carrier Corp. From 1935 to 1937 he was connected with the Houde Engineering Corp. of Buffalo.

Riedel later became chief engineer of the Air Conditioning and Refrigeration Division of Worthington Pump & Machinery Corp. He is a member of ASRE and NAPRE and has served on various engineering committees for both associations.

At Baker, Riedel will work on improvements in the company's present line of equipment and a long range program of new compressor design and production being inaugurated.



COOLING REQUIREMENTS for this small store without any basement were slightly in excess of 1,000 tons. Top discharge grille of this remote type conditioner was altered with a small duct for side air distribution.

### Small Building -- Big Problem!

## Air Conditioning Basementless Shoe Store On Dead-End Alleyway Required Know-How

BATON ROUGE, La. — Installing an air conditioning system in a small store without a basement or any other space to house the necessary equipment demands the utmost in engineering know-how and ingenuity.

And yet, in a nutshell, that was precisely what Harry C. Ashcraft, of Standard, Inc., a Frigidaire dealership in Baton Rouge ran up against when he undertook to solve the air conditioning problems of Bob's Juvenile Shoe store, owned and operated by Robert Baudry.

The problem presented itself in the following fashion. During World War II, so heavy was the demand for store space on busy Third St. in downtown Baton Rouge that a small "dead-end" alleyway was enclosed to provide a spot for the small shoe store, which was opened by Baudry.

A small bulkhead window with a glass door 2½ ft. wide and 6½ ft. high formed the front and only means of entrance, ventilation, and light. Solid side and rear walls of brick with occupied offices above and a concrete slab floor without any basement underneath posed more than the usual problems.

While the heating load was small, the cooling requirements were slightly in excess of a ton of refrigeration, a survey revealed. However, the survey also disclosed that space would have to be found for the air conditioner and compressor and some method of heating provided.

To solve these problems, Ashcraft installed a Frigidaire remote type room air conditioner of 15,000 B.t.u. per hour capacity flush in the shelving near the ceiling at the rear of the display area. The top discharge grille was altered with a small duct for side air distribution.

As outside gas venting was impossible under the building code, four 1,500-watt strip-type electric heaters were mounted in the duct extension. A M-H T-42 thermostat control, operating a relay, was hooked up with the heaters.

A combination air and water-cooled Frigidaire reciprocating compressor of 1½ hp. was mounted in a second floor light well. During the operation this unit uses water only when the ambient air is 90° F. or higher. Other times it is air cooled.

Despite the fact that the small shoe store is frequently crowded by customers, Baudry has reported that adequate cooling is provided at all times. Natural infiltration of fresh air through the normal opening and closing of the front door provides adequate ventilation.

So successfully did the system solve the air conditioning problem at the small store, Baudry has installed larger year-round systems of the same design in two other shoe stores which he owns and operates.

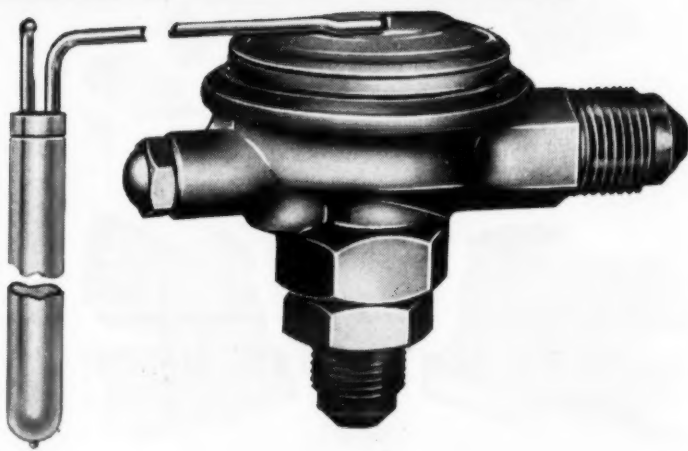
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## What's New

### Punxsutawney Features 2-Tone Cabinet Finish

KEY NO. A-740

PUNXSUTAWNEY, Pa. — The Punxsutawney Co. has instituted two-toned appearances in its line of "Beverage-Air" refrigeration equipment, it was announced here recently.

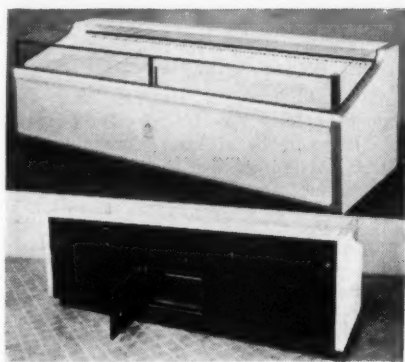
As in previous models, the top and lids are stainless steel, but the cabinet fronts and ends are now finished in a baked-on metallic tan hamerene finish.

The neutral tone is said to add richness and to be suitable for blending into modern installation color and decorating schemes, according to the company.

In addition to the two-toned effect, self-contained models are now available with the refrigeration units built into a portion of the lower cabinet, the manufacturer further indicates.

The "Beverage-Air" principle of cooling—dry-cold air pulled evenly through the entire coil area by a suction type fan and then channeled directly from the fan blade over the inside top of the cabinet—has been retained in the new Punxsutawney models.

Literature on the refrigerated equipment line is available upon request.



### Open View Display Has Rear Loading Feature

KEY NO. A-741

SAN ANTONIO—An open, self-service display case with no superstructure is a recent addition to the line manufactured by the Ed Friedrich Sales Corp. here.

Called the Openview OL11R, the case loads from the rear. It is particularly designed for use in front of meat cutting rooms or other locations where customer's vision beyond the case is desirable.

Like others in the Friedrich line, the OL11R has the patented, controlled Floatingair system. It is a double-duty model with storage compartment below. It is available either as a separate unit or with ends for line-up with other Friedrich models.

### Research Laboratories Has New Corrosion Inhibitor

KEY NO. A-742

EAST ORANGE, N. J.—An anti-corrosive metal protector that reacts upon the metal treated and not upon the water surrounding the metal is now being offered for national distribution by the Research Laboratories of Dr. Schror, Inc. here.

Called Corrosanti, the preparation is manufactured in four grades depending upon the purpose for which it is intended. It is packaged in 5-gal. containers.

Grade B acts as a rust inhibitor for water tanks and towers (inside and out), sprinkler systems, open air condensers, and other such equipment. It is applied with a short, stiff-haired brush so that the Corrosanti will cling to wet or rusted surfaces.

According to the manufacturer, one coat of Corrosanti Grade B has provided adequate protection for 15 years in an actual test.

Corrosanti Grade C is designed for protection of metal surfaces subject to acid and other highly corrosive vapors, gases, acid-forming condition, salt water, and brines.

Applied in the same way as Grade B, this preparation can be used in ice plants, warehouses, and slaughter houses where iron is submerged in or carries brine.

Corrosanti Grade A is designed to protect boiler metal surfaces by removing scale deposits and sealing the metal's pores to prevent further rusting.

Corrosanti Special is designed for ferrous surfaces subjected to temperatures of 900° F.

### New Orley Models Range from 7½ to 16 Cu. Ft.



KEY NO. A-743

DETROIT—Three new home freezer models of approximately 7½ and 16 cu. ft. capacities have been introduced by Orley Corp. here.

They are the AM8 equipped with 4 sq. ft. of insto-freeze shelves, the AS8 without the insto-freeze shelves but equipped with a wire basket, and the AM16, which is practically a combination of both.

The AM8 with 7.5-cu. ft. capacity carries a suggested retail price of \$295.50, the AS8 with 7.6-cu. ft. capacity has a suggested retail price of \$279.95, and the AM16 with 16.1-cu. ft. capacity is listed at \$529.50.

The AM8 and AM16 feature an attractive "inventory record chart" painted on the inner side of the lid (both lids on the AM16). This chart provides columns headed "Date," "Item," "Quantity," and "Want List." About 50 lines are provided under each column heading for indexing.

The AM8 and the AS8 are basically the same unit. Only differences lie in the two insto-freeze shelves in the AM8 and wire basket in the AS8, the design of the name plate, and the design of the latch (on the AM8 it locks, on the AS8 it doesn't).

Both cabinets measure 36 in. high, 33 in. wide, and 28 in. deep. They are constructed of 20-gauge steel with heavy structural steel base and white DuPont duo baked enamel exterior. PF-513 high density Fiber glass insulation is used.

The lid is one piece with compensating hinges and stays open in any position. The evaporator is in the wall with refrigerant coils bonded to the aluminum liner. Plastic breaker

strips with stainless steel corners are used.

No defrosting is required, says the manufacturer, just brush away the accumulated snow occasionally.

The freezer is powered by a ¼-hp. Tecumseh hermetically sealed unit, convection cooled and using "Freon-12" refrigerant. A Ranco control is set at the factory but can be adjusted to suit individual needs.

The warranty covers the freezer for one year and the unit for an additional four years. In addition an insurance warranty is written of food spoilage up to \$200 for one year.

Shipping weight for both models is 275 lbs. There are 36 units to a truckload and 76 to a carload.

The large freezer has the same construction features as the smaller chests. It measures 36½ in. high, 66 in. wide, and 28 in. deep. It is powered by a ¼-hp. hermetically sealed, fan-cooled compressor and uses "Freon-22."

In this model, the two insto-freeze shelves are located in one half of the freezer and wire baskets in the other half. Two lids are used. Both can be locked.

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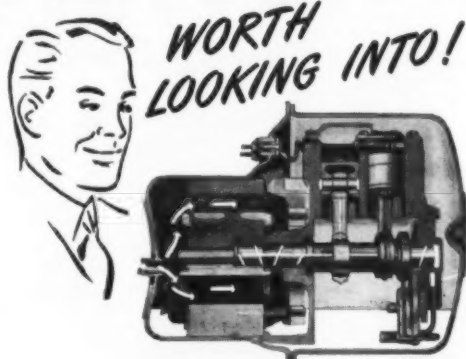
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## What's New (Cont.)



**Grill Stand Offers Updraft, Or Downdraft Ventilation**

KEY NO. A-744

CHICAGO—A new grill stand for restaurants that is manufactured for updraft or downdraft ventilation has been introduced by Mallow Products, Inc. here.

The unit is fabricated in heavy gauge stainless steel with base and superstructure insulated to eliminate fire hazard. It also features a filter type grease trap, three drawers, offset to fit deep fat fryer, shelf, and laminated maple work top.

**Cabinet Lets Air Escape Over Refrigerator**



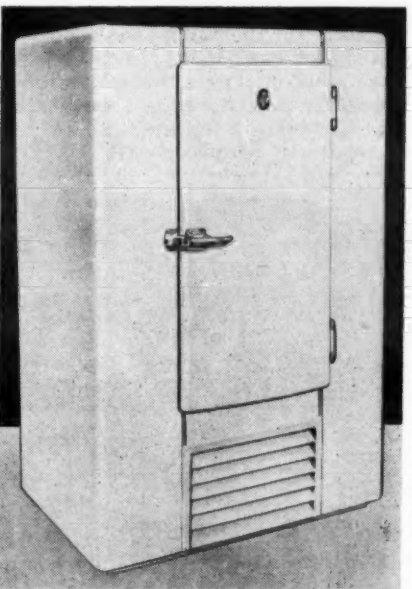
KEY NO. A-745

AURORA, Ill.—Designed for installation directly over the refrigerator, a cabinet which provides dry storage space for crackers, breakfast cereals, salt, and other items is being produced by Lyon Metal Products, Inc. here.

Doors hinged at the center are equipped with full-size wire baskets which swing contents of the cabinet out within easy reach.

The company claims that the cabinet "does not interfere with the operation of the refrigerator in any way. The construction of the cabinet is so designed that the duct extending up the back and across the top of the cabinet allows the air over the refrigerator to circulate and escape through grills at the top."

**Col-Temp Freezer Features Adjustable Shelving**

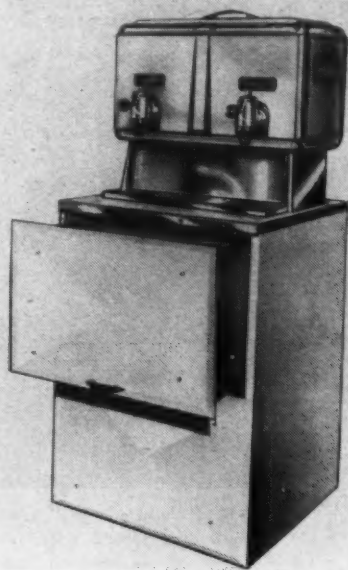


KEY NO. A-746

OAKLAND, Calif.—Featuring adjustable shelving and two interior doors, a new "Col-Temp" home and farm freezer of 14-cu. ft. capacity has been introduced by Simplex Mfg. Co. here.

The reach-in model occupies a floor space of 28 in. by 40 in., and is 72 in. high. It holds up to 500 lbs.

Finished with baked Dulux on "paint grip" steel, the model has an "extra fast" freezer plate, 5 in. of Fiberglas insulation (6 in. in the bottom), a sealed unit, and heavy brass, chrome-plated hardware. Tubing is banded to aluminum for efficient operation.



**Dallas Drink Dispenser Needs Little Floor Space**

KEY NO. A-747

DALLAS—A line of self-contained, highly carbonated drink dispensers designed to occupy a minimum of floor space has been introduced by the Dallas Soda Fountain Co. here.

The line consists of the Hafer Senior, the Hafer Junior, and the Keg. Each will dispense three soft drink flavors and can be refrigerated either with a Kelvinator hermetically sealed unit or crushed ice. Both water and syrup are pre-cooled to produce the highest possible carbonation, according to the manufacturer.

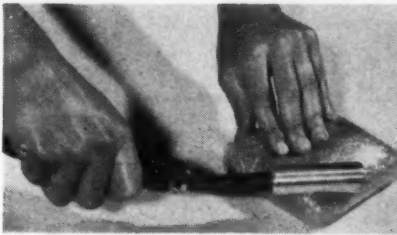
The Hafer Senior measures 24 in. wide, 22 in. deep, and has a working

height of 38 in. It is equipped with adjustable legs for balancing. On ice cooled units, the head holds 30 lbs. of crushed ice while a fully insulated storage drawer holds 65 lbs. more.

The Hafer Junior takes only 15 by 13 in. of floor area. Its ice cooled head holds 17 lbs. of crushed ice. Storage space is provided in the base.

The Keg is basically the same as the Hafer Senior except that the syrup storage portion of the unit is in the form of a root beer keg.

**Market Sealing Iron with Special Bearing Roller**



KEY NO. A-748

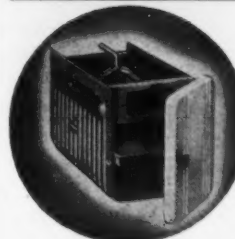
CLEVELAND—A sealing iron designed particularly for use with Pliofilm by engineers of Goodyear Tire & Rubber Co. and the Cleveland Lathe & Machine Co. here is now being offered to the trade by the latter company.

Michael J. Barnak of the Cleveland firm said that the sealing iron, called Rol-A-Seal, is equipped with special bearings.

He considers it particularly adaptable, through its roll and seal motion, to sealing odd-shaped packages such as hams and roasts.

The iron is equipped with an adjustable thermostat.

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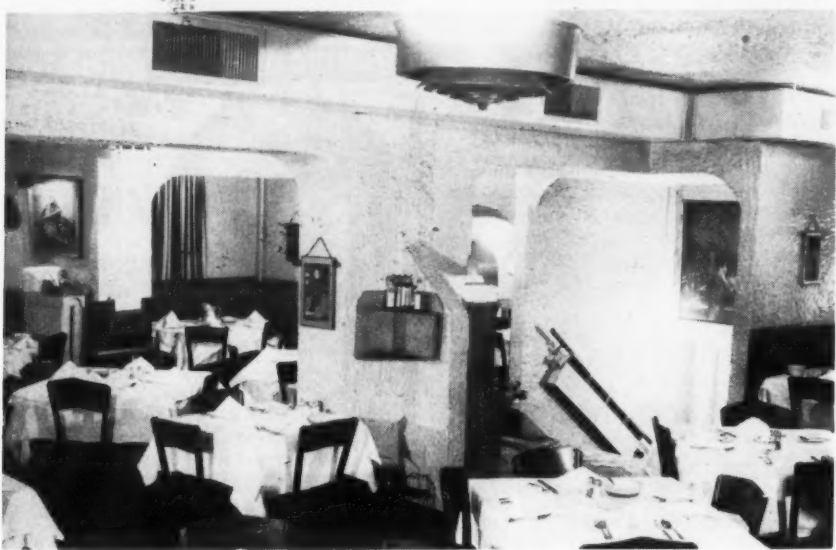
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MAIN DINING room area in Lelli's, popular Detroit restaurant, presented problems in running ductwork because of numerous partitions in the structure.

### Built In 1885

## 65-Yr.-Old Home, Now a Restaurant, Offers Problems for Air Conditioning Contractor

By C. Dale Mericle

DETROIT—Designing an air conditioning system for installation in a new building at the time of construction poses some problems, but there's generally no comparison with the difficulties encountered in air conditioning an existing structure.

This is all the more true when the building is an old one.

Such was the problem faced by

Lou Radoe of Radoe Refrigeration here when he proposed to air condition Lelli's Inn, one of the better eating spots in Detroit, because the building it occupies is about 65 years old.

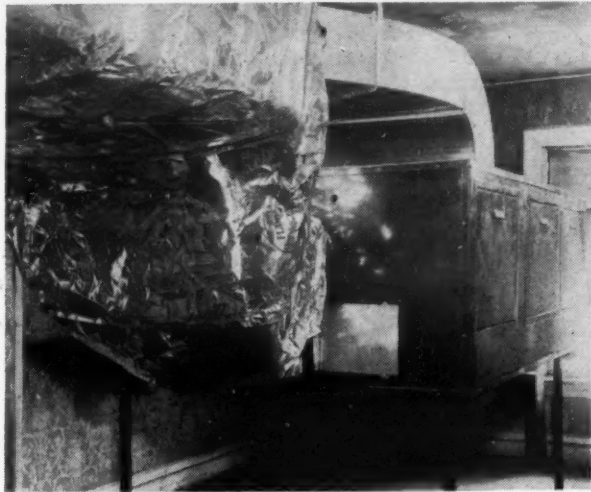
"Several firms hesitated to take the job on," recalls Radoe, "but personally I get more satisfaction out of an installation of this type than

a simple one for a new building."

Actually the building occupied by the restaurant was a sizeable private home when it was built on Detroit's main street around 1885. Mario Lelli has operated his restaurant there for the past 12 years, however, and a quick glance at the modern glazed tile front of the structure would not indicate its origins.

Dining room area and kitchen occupy the first floor, while in the basement space is provided for storage and preparation of meats and vegetables. Most of the second floor is unoccupied, except for the ladies' lounge.

But the first floor dining room area presented difficult problems in laying out the ductwork. Space was at a premium, too, because the place has a seating capacity of 150. The dining



AIR HANDLING unit containing coils and filters was located in unused second floor, refrigerant lines running up the outside of the building from condensing unit in basement.

room area consists of four sections—the large, central room, two small alcoves (one on each side of the entrance), and a small section between the central room and the kitchen.

The space to be conditioned is "cut up" rather badly by archways, partitions, and second floor supports, which complicated the problem of running ducts, not to mention locating equipment.

Solution worked out by Radoe resulted in the installation of a 10-hp. direct expansion, water-cooled Curtis condensing unit in the basement of the structure. The air-handling unit itself was located in an unused centrally located room on the second floor, directly above the condensing unit.

Refrigerant lines run up from the unit to the air conditioner along the outside walls of the building. Also running along the outside walls of the building are condenser water lines from the unit to a Binks cooling tower. The latter is located above the rear entryway to the restaurant.

Level of the air unit is slightly higher than the cooling tower, so to further conserve water and at the same time dispose of the condensate from the coils, a drain line runs from the air unit along the outside of the building to the sump tank of the cooling tower. This reduces the amount of make-up water required.

The air conditioner was so located that providing a fresh air intake was a relatively simple matter. A duct

runs from an opening in the window of the conditioner room to the unit. Supply and take-off ducts from the unit are wrapped with foil insulation to reduce losses before the conditioned air reaches the spaces to be cooled.

There are five branch take-offs. A small one supplies conditioned air to the second-floor lounge. Two others feed the rear dining room, while the remaining two handle the main dining room and the two alcoves up front.

### A-P Sets Up Local Gas Controls Service Outlets

MILWAUKEE—First of a proposed series of service outlets to handle repairs and replacement of gas controls has been announced by A-P Controls here, manufacturer of gas, oil, and refrigeration controls.

Roy W. Johnson, A-P president, said the company had named the Ohio Pump and Service Co. as an authorized outlet to handle gas controls. The firm is located at 904 Lorraine Ave., Cleveland, and is one of 44 authorized outlets providing service for A-P oil controls.

Johnson indicated that service outlets for gas controls will be established wherever gas is prevalent, to provide "on-the-spot" service to dealers and servicemen.

At the same time, the A-P president said his company plans to conduct an educational campaign for servicemen employed by utilities. A recent training school of this type was held for service employees of the East Ohio Gas Co.

The Ohio Pump and Service Co. is managed by W. W. Rattrich, who has completed the A-P Controls factory training course provided for all service station personnel. The Cleveland outlet will handle a complete line of A-P controls.

### Air Conditioned Apartments Have Formal Opening In Dallas

DALLAS — Matthews Engineering Co. here, had the contract for installation of Chrysler Airtemp air conditioning equipment in The Cosmopolitan, Dallas' newest apartments, which were formally opened here recently.

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Offered in Shell and Coil and Shell and Tube designs, the ACME line of condensers is very complete—more than 120 standard sizes are offered for use with Freon, plus seven sizes in Model SC Shell and Finned Coil, with twelve additional sizes in Model J Shell and Tube Condensers. Both are designed for Freon 12 or Freon 22 Refrigerant. ACME Condensers are inexpensive, have drainable coils, are easy to clean and are compact, sturdily built and extremely efficient.

#### ACME HEAT EXCHANGERS

Available in 16 standard sizes, in capacities from 1/2 to 180 tons, ACME Heat Exchangers increase compressor capacity, prevent flash gas in liquid line, eliminate expansion valve vibration or chattering and offer true counter-flow operation. Model H has shell and coil construction. Also available in "U tube" bundle construction. ACME Heat Exchangers offer a practical solution when compressor capacity is on the border line for load requirements.

#### ACME OIL SEPARATORS

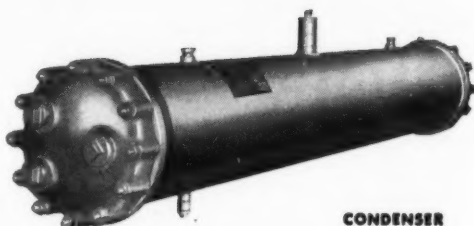
Are offered in a complete range of sizes, are economical and efficient to operate, easy to install and offer positive oil separation. Offered in a complete range of sizes, they are scientifically engineered for use with Ammonia or Freon. Series F Units have a central mounting strap and may be mounted directly on the Compressor base. Series FK and AK Models have a support bracket welded to the top.

#### ACME DRY-EX\* WATER COOLERS

Designed to meet an extensive variety of either commercial or industrial applications, ACME DRY-EX Water Coolers are offered in more than 700 combinations of refrigerant heads baffle spacings and tube lengths. ACME Straight through tube construction permits the refrigerant circuit to be increased twice as frequently as in the "U tube" design. Baffles have a tighter fit with the shell and with the tube, and straight through tubes can easily and economically be replaced in the field.

ACME ALSO MANUFACTURES: Freon Condensers—Ammonia Condensers—Blo-Cold\* Industrial Unit Coolers—Evaporative Condensers—Liquid Receivers—Pipe Coils—Shell and Tube Condensers—Shell and Coil Condensers—Heat Exchangers—Flow-Cold\* Liquid Chillers.

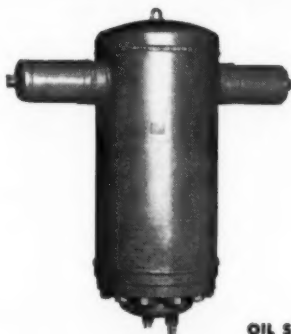
# Acme



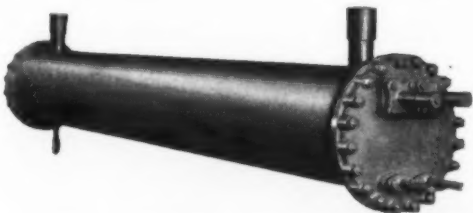
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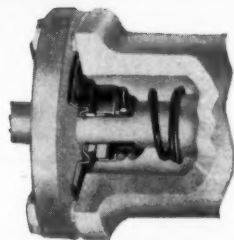
INDUSTRIES, INC., JACKSON, MICHIGAN, U.S.A.

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## ROTARY SEAL Replacement Units

UNIT NO.

1115



AVAILABLE FOR MORE THAN  
**900**

COMPRESSOR MODELS

Easy to Install Efficient in Operation  
Simple in Construction Economical

For Commercial, Semi-Commercial, Air-Conditioning and Home Refrigerator Compressors... Proven by outstanding performance over 20 years!

AT  
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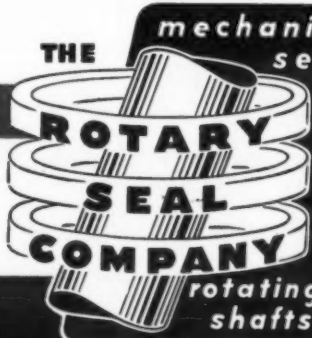
THE

mechanical seals for

LEADING  
JOBBERs

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Certainly!"



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## SLANTS on Service

"Slants on Service" is a new "package" devised by the NEWS to meet the needs of its busy readers in the service and contracting business. These helpful hints and suggestions for improved service methods and shortcuts have been assembled in capsule form.

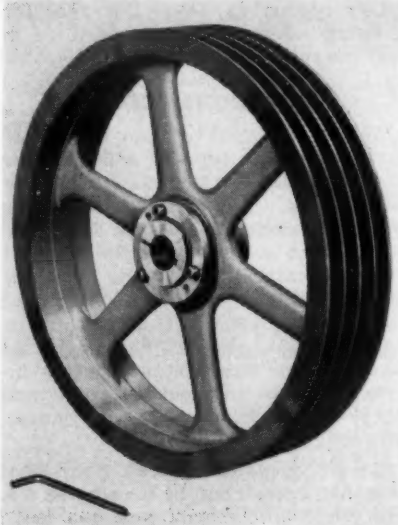
### Faster Deliveries Obtained On Stock V-Belt Sheaves

Faster deliveries may be obtained on belt drives if standard, stock items are specified instead of special items, points out J. H. Snartemo, application engineer of Allis-Chalmers' Texrope drive department. "Generally speaking, anything about a V-belt sheave which departs from stock specifications adds material to delivery time," he says. "A special keyseat, for instance, may entail a re boring operation as well as a setup on the keyseater. These operations usually require additional paper work and a wait for machine capacity."

Stocks of V-belt sheaves are pretty well standardized as shown in table below.

"If the required driven speed of a drive is such that it cannot be obtained by any good combination of two stock size sheaves, select the larger sheave from stock and have the smaller one made to order," he suggests. "This will usually result in both a cash saving and a faster delivery."

Practically all stock size sheaves are equipped with removable bushing having definite bore limits, both maximum and minimum. Instead of ordering a special sheave to meet



the requirements for a five-groove drive, say, a stock six-groove drive might have bushings. The latter would probably cost less than a five-groove special sheave and be delivered much sooner.

Development of high capacity or "super-rated" belts would also permit the number of grooves to be reduced. Use of these belts in some cases might allow a stock-size sheave to be used instead of a special one with additional grooves.

V-Belt Size	Range in Pitch Dia.	Range in No. of Grooves
"A" ( $\frac{1}{2} \times \frac{11}{32}$ )	2.6 in. to 18.0 in.	1 to 6
"B" ( $\frac{21}{32} \times \frac{7}{16}$ )	4.6 in. to 38.0 in.	1 to 10
"C" ( $\frac{7}{8} \times \frac{17}{32}$ )	9.0 in. to 50.0 in.	3 to 10
"D" ( $1\frac{1}{4} \times \frac{3}{4}$ )	13.0 in. to 48.0 in.	5 to 12

### Remove Plug Before Working On Some Type Refrigerators

Always remove the power-cord plug from the power outlet when servicing the Philco "F" line of 1951 Duplex refrigerators. Do not stop the refrigerator unit by simply turning the temperature control to "off." Certain circuits will remain energized unless the power-cord plug is removed from the receptacle.

### MISSING SOMETHING?

More and better useful information is yours for the asking. See "What's New" page.

## Wholesalers' Sales, Inventories Continue Gain over 1950

WASHINGTON, D. C.—Although May dollar sales of appliance and specialty wholesalers and refrigeration equipment wholesalers lagged behind the year-ago level, sales of both groups for the first five months of 1951 were well ahead of the same period of last year, according to Bureau of Census figures.

Sales of appliance and specialty wholesalers in May skidded 20% below a year ago while those of refrigeration equipment wholesalers fell off 2%. These trades were two of only four wholesale trades to show declines compared with May, 1950. Total May sales of all wholesalers reporting to the bureau rose 10% over a year ago.

May sales of appliance and specialty wholesalers also dropped below April (10%), but those of refrigeration equipment wholesalers increased 10%, compared with a gain of 3% for total wholesale sales. However, sales of both appliance and equipment wholesalers in the first five months of 1951 were up from the same period a year ago, the former 21% and the latter 31%.

Appliance and specialty wholesalers' inventories at the end of May soared 69% above a year ago but were only 1% higher than that of April.

Stocks of refrigeration equipment wholesalers increased 34% compared with May, 1950, and 3% compared with April.

Total wholesaler inventories advanced 38% over a year ago and 3% over April.

### Sales by Geographical Division

Kind of Business and Geographic Division	Per Cent Change			May 1951 Panel No. of Firms Reporting	Reported Dollar Values (add 000)
	May 1951 from May 1950	May 1951 from Apr. 1951	5 Mos. from 1950		
Appliances and specialties wholesalers	-20	-10	+21	114	20,824
New England	-20	-27	+47	8	1,149
Middle Atlantic	-20	-16	+24	26	7,720
East North Central	-7	-13	+20	17	2,206
West North Central	-26	-26	+30	15	1,637
South Atlantic	-30	-8	+9	18	2,776
South Central	-36	+50	-4	10	1,588
Mountain	0	0	+35	6	932
Pacific	-5	+13	+15	14	2,816
Refrigeration equipment, parts (com'l)	-2	+10	+31	66	2,082
Middle Atlantic	-25	+7	+10	14	570
East North Central	-6	+20	+18	16	214
South Atlantic	+14	+7	+22	22	586
Pacific	+10	+7	+42	7	263

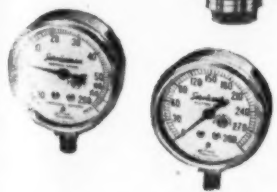
### Inventory, End-of-Month (At Cost)

Kind of Business and Geographic Division	Per Cent Change		May 1951 Panel	
	May 1951	May 1951	No. of Firms Reporting	Reported Dollar Values (add 000)
	from	from		
	May 1950	Apr. 1951		
Appliances and specialties wholesalers	+69	+ 1	88	36,750
New England .....	+44	- 1	6	1,948
Middle Atlantic .....	+101	+ 1	13	9,305
East North Central .....	+74	+ 2	14	4,481
West North Central .....	+69	0	13	6,291
South Atlantic .....	+54	- 4	17	5,250
South Central .....	+57	- 6	8	3,232
Mountain .....	+17	+20	6	1,596
Pacific .....	+76	+ 7	11	4,647
Refrigeration equipment, parts (com'l)	+34	+ 3	60	4,892
Middle Atlantic .....	+39	+ 5	11	1,114
East North Central .....	+20	0	16	777
South Atlantic .....	+29	+ 1	21	1,370
Pacific .....	+44	+ 6	7	839



## "Marsh speaks our customers' language"

Type WP Marsh Electric Water Regulator—one of many in the line which also includes solenoid valves in a full range of types and sizes.



A team of thoroughbreds for the man who wants the ultimate in testing gauges. Other refrigeration gauges for all purposes.



The Serviceman that Mr. Langsenkamp is holding. It's a must in every testing kit.

A big distributor doing a big job in the refrigeration field is F. H. Langsenkamp Co. Five busy mid-western cities are served by as many Langsenkamp houses—four in Indiana at Fort Wayne, South Bend, Evansville and Indianapolis and a fifth at Louisville, Kentucky. The photo above, snapped in the Indianapolis house, pictures F. S. Langsenkamp Jr. (center) and Harold Gray, Indianapolis store manager, (right) watching the snappy response of a Marsh "Serviceman" thermometer.

The man at the left holding the bulb is Les Greulich of Marsh Instrument Co., and it's likely his temperature rose slightly above normal at the pleasant things the Langsenkamp management had to say about Marsh equipment.

Yes, the Langsenkamp Co. has shown its confidence in Marsh equipment by carrying a full line of Marsh gauges, thermometers, testing instruments, and the full Marsh-Electrimatic line of automatic control and regulating valves. "It's the kind of equipment we like to handle," said Mr. Langsenkamp, "dependable, uniform, accurate, and solidly built to stay accurate. It's the kind of equipment that speaks our customers' language."

Throughout the U.S. you find progressive jobbers like Langsenkamp Co. who handle the Marsh line because it speaks the refrigeration man's language—the language of on-the-job dependability—convincingly plain.

See your jobber

MARSH INSTRUMENT CO.  
Sales affiliate of Jos. P. Marsh Corporation  
Dept. D, Skokie, Ill.

**MARSH**

Refrigeration Instruments

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ELECTRIC MOTORS  
...the choice of leaders  
in industry

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worth looking into

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are exceptionally well-adapted to applications with fairly heavy starting loads

The choice of the motor that powers your product is all important. Uniform performance, troublefree long-life operation, a well-known name, and the ability of the manufacturer to provide fast service and repair parts on a nationwide scale, are all factors that add up to satisfied customers for you.

Wagner capacitor-start motors are worth looking into for general purpose applications requiring high starting torque. They are available with sleeve or ball bearings, rigid or resilient bases or a machined end plate for flange mounting. Bulletin MU-185 gives full details—write for your copy.

WAGNER CAPACITOR-START MOTORS...built in ratings from  $\frac{1}{8}$  through 3 hp.

when you choose Wagner Motors you save time, money, worry because:

1. Improved engineering features assure long life and efficient operation.
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3. Wagner Motors are backed by a liberal warranty.
4. They are available from Wagner Branches in all principal cities.
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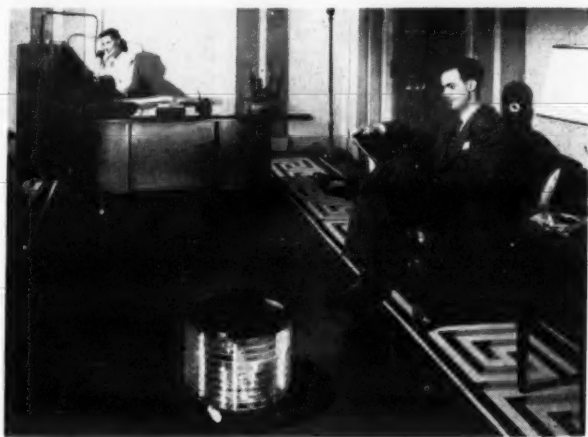
ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES  
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BRANCHES IN 31 PRINCIPAL CITIES



## New Selling Techniques . . .

## How To Pre-Plan Fan Sales--Some Ideas To Try



SELLING ITSELF—Offices are still prime prospects for circular floor fans. A three-day demonstration will go a long way toward making a sale.

CINCINNATI—The increasing popularity of hassock and window-type air circulators has brought with it some new and interesting selling ideas, says Lawrence H. Welch, general sales manager, W. W. Welch Co. here.

These have come to the forefront because of the larger areas which these fans cover. Instead of providing cooling air movement for just one person, these fans will provide comfort for a good sized group or several rooms in a home.

As a result of this, ingrained ideas about fan cooling among prospects have to be modified or completely changed. One fan per person is no longer applicable and, since prices are in line with bigger sizes, many

selling angles have been explored to convince customers of the worth of these appliances.

Historically, the hassock type fan is 50 years old. The original idea was patented by a dental supply manufacturer in Philadelphia around the turn of the century. Like many other ideas, it did not become a success because it was not properly merchandised and the design of the units was poor.

Until newer patents were granted in 1940, fan cooling was generally accepted as being limited to the oscillating or pedestal types. Then, starting distribution by concentrating on offices, the hassock fan gradually built up a new idea of cooling. After

World War II, this fan and the bigger window types found favor among homeowners until, today, these two types of air circulators are winning more and more acceptance.

Hot weather is the key to more air circulator sales. A long period of such weather is not necessary for a good selling season. With a minimum of 10 straight days of extremely hot weather, sales can be accomplished that will give you a good or even excellent season. To take advantage of this, however, requires prior planning so that your sales promotion efforts can swing into action immediately.

A prime method that has been responsible for many sales is the office demonstration method. This can also be used in making home sales. It simply consists of leaving a fan on demonstration for a period of three days, no more and no less.

As the fan is a plug-in appliance, and the window fans require no elaborate installation, it is easy to carry such a unit into the prospect's home or office. The initial sales talk is held to a minimum and concentrated on securing the prospect's acceptance to leave the fan on trial.

## THE 3-DAY TEST

The fan should not be left more than three days. Time after time, it has been found that this period is just right for the prospect to make up his mind. Between 80 and 90% of fans left for demonstration have

been sold within this three-day limit.

It gives the prospect enough time to adjust the fan to his own working or living conditions; to discover how large an area the fan will cool; to learn its portability; and, most important, to find that the fan does cool him. If the prospect does not make up his mind within three days, he is either going to take the fan for granted without purchasing it or is not interested in buying one.

## TRY HOMES, TOO

While offices have been the prime target for this type of selling, it is also applicable to homes. By leaving the fan for three days at home, the prospect's wife can see the difference it makes in her work and the inherent safety features that she will be thinking about, particularly if she has small children. This last factor can be most important as census figures show the vast population increase within the last 10 years and these new citizens are, of course, still under 10 years of age.

In planning other ideas, your local weather bureau can be a valuable aid. By telephoning them, you can learn what the prospects are for hot weather and how long it might be extended. It should be repeated that the extension of a one or two-day heat wave into a longer period will make a good deal of difference in your profits.

Although some forethought is usually given to the purchase of an air circulator, it becomes an impulse item when a short heat wave is extended a week or more. Two or three hot, sleepless nights on your prospect's part will do much to lower his sales resistance.

Based on these weather reports, your advertising should run in local media. However, plans should be made before this hot weather breaks. This can be done by selecting the proper advertisement from your manufacturer's mat service and turning it over to the newspaper. It will be held there until you telephone for its insertion. Similarly, radio and television announcements should also be in the hands of the stations' representatives. Then, when the weather outlook is favorable, you can tie in immediately.

## ANIMATED WINDOW, FLOOR DISPLAYS SELL

Window and floor displays should not be overlooked. Using simple animation, these can be another vital factor in pepping up your sales. Eight or 10 ribbon streamers attached to an air circulator will give a good demonstration of the air flow. This demonstration is effective with both window and hassock type models, but probably more effective with the hassock types. It clearly demonstrates the circular air flow of these fans without "dead spots" and the output over a good sized area.

Another good demonstration is to place a letterhead against the side of the fan. It will be held in place by the suction from the lower part but will bend outward from the top showing the air flow. Cigar or cigar

**Editor's Note:** In this article Lawrence Welch, general sales manager of W. W. Welch Co., outlines several methods for selling circular floor and window-type fans. The principles he applies to these products could be used to sell other types of cooling equipment as well.

rette smoke blown into the unit will also show the even air dispersal. A chair placed near the fan for your prospect to sit in will show him the "chair level" cooling effect.

The major point for the large window units is that they will circulate the air through at least several rooms in the average home. To do this, they should be mounted on a window giving the best air intake or exhaust and other windows should be opened to secure the best ventilation. Many consumers do not yet understand this.

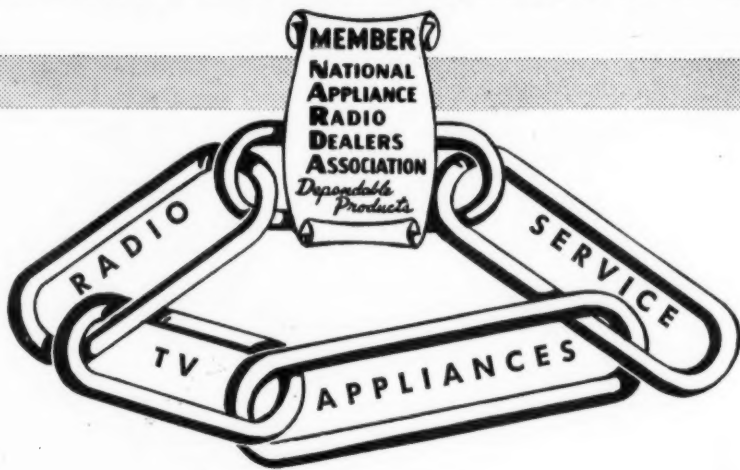
To enable them to grasp this more clearly, a cutaway drawing of an average five or six-room home should be used. This can be mounted on heavy cardboard or drawn on a bigger display that also holds one or two window units in simulated windows. The drawing should show the direction of the air flow by means of arrows and how this direction is changed according to where the fan is placed.

## VISUAL IMPRESSION IMPORTANT

From this, the prospect receives a visual impression of what the unit will do in his home. Special problems can be solved by using simple sketches on a pad of paper, according to the prospect's explanation of his own home.

If the cutaway is not applicable, the fan can be placed in a simulated window frame. Newer types can be used in both sash or casement windows so frames should be secured for both types. Since many prospects think a high installation cost is necessary, these will demonstrate how quickly and easily the fans may be mounted by means of brackets that are in each package.

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- ☆ To stop artificial credit restrictions!
  - ☆ To erase production-distorting material limitations!
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☐ I should like to be enrolled as a member of your Association. My annual appliance, radio, TV and service volume totals:

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 ..... \$50,000 to \$75,000 (Dues \$36)  
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 ..... \$150,000 to \$250,000 (Dues \$75)  
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Firm ..... Phone .....

Signed ..... Position .....

Street Address .....

City ..... Zone ..... State .....

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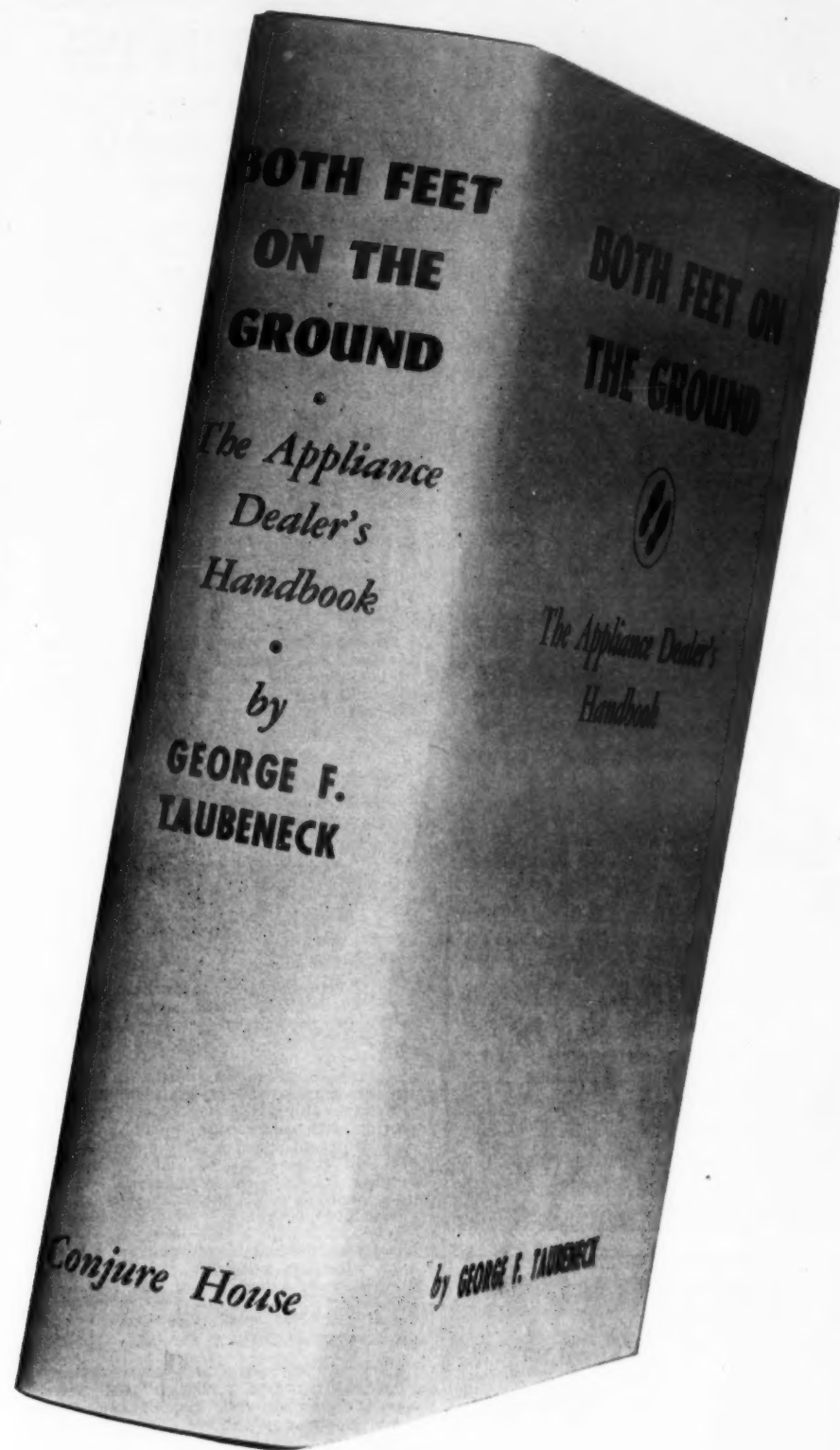
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MANUFACTURERS,  
PROGRESSIVE BUSINESSMEN**

*Read*

## **BOTH FEET ON THE GROUND**

*The Specialty Dealer's Handbook*



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This encyclopedia of appliance and specialty retailing was not dictated from any ivory tower! It was carefully assembled and organized from notes taken during thousands of interviews with 323 of America's finest and most successful appliance and specialty dealers.

Twelve months and 52 weeks in every one of the last 20 years, George F. Taubeneck, as editor and reporter for AIR CONDITIONING & REFRIGERATION NEWS, listened and noted and listened again to the real authorities on retailing—men in the retailing business. America's finest dealers not only sponsor this book, but are responsible for it. They actually *LIVED* every one of the tested experiences, attitudes, actions and reactions, that are mirrored in the Handbook's 600 plus pages.

No wonder "Both Feet On The Ground" is a complete guide book to the most profitable way to operate an appliance or specialty dealership! It is a weighted summary of the very best dollar-producing approaches to every dealer problem, right from selecting the franchise, to closing the books in black, at the end of the month. There isn't one aspect of running an appliance business that isn't treated in this Handbook. A convenient index makes it easy to answer any problem, large or small, with just a flick through the pages.

Anyone who hopes to become a better retailer can find, in this wonderful new book, basketsful of dollar-making ideas he can apply to his own business, in his own way.

Manufacturers and distributors, who rely on retail outlets for sales of your products, see an abundance of new ways to merchandise to your dealers, to create more demand for your particular refrigerators, ranges, washers, disposers, humidifiers, and freezers. See the business as retailers see it.

Send for a copy of this new book today. Use the purchase order form at the right and mail it immediately. This book is sold on a money-back guarantee basis. Don't miss this opportunity to collect big dividends on a nominal investment. (If you prefer you can order a copy on approval. If not completely satisfied, return the book under no obligation.)

The publication of this book could not have been more timely if we ordered an exact date. Now that the President has declared a national emergency, who knows what is liable to happen to the appliance dealer. If rationing and priorities are imposed, the service side of your business will boom, because of the need for repairs on equipment that would have otherwise been traded in or junked. This book has complete, reference information on how to properly and most efficiently run a service business.

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Name .....  
Address .....  
City ..... Zone ..... State .....  
7-23-51

### **YOU KNOW THE AUTHOR ...**

George F. Taubeneck for his brilliant books on specialty selling, salesmanship, and sales management. "One Foot In The Door," "It's A Great Life," and "The Marshal's Baton" still sell copy after copy every week.

Now, George submits perhaps his most important work, "Both Feet On The Ground" for use and study by our Industry.

His 20 years as Editor and Publisher of AIR CONDITIONING & REFRIGERATION NEWS eminently qualify him for the job of compiling such a Handbook, and the results are beyond our fondest hopes. In his work as reporter, editor, ambassador to the Industry, and champion of the businessman, literally thousands of hours have gone into his interviews and travels throughout the country, and the world. The wisdom and knowledge he picked up along the way are reflected in every one of his books.

"Both Feet On The Ground" renders at a time when such service is perhaps more solely needed than ever before, because of credit restrictions, unique guidance to all of America's appliance and specialty dealers and the manufacturers and wholesalers who supply them. Taubeneck's insight and grasp of the core of every problem in retailing, as learned by and from men in the business all their lives, provide counsel and assurance to all concerned. In months like these, when we don't know from one day to the next, whether we'll be in a shooting war or a cold war, whether there will be oversupply or undersupply, or whether there will be credit restrictions or no credit restrictions, it pays every man concerned with the appliance and specialty business to be prepared for any conditions, favorable or not.

"Both Feet On The Ground" offers a sane, sound, and sensible way to be prepared.

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Order  
Form  
Today!**



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SAVE 6 WAYS

ALL SHAPES & SIZES  
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PROVIDENCE 7, RHODE ISLAND

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BELT-DRIVEN OR HERMETICS  
1/6 H.P. to 10 H.P.

ANY QUANTITIES • MUST BE NEW

Write, Phone Or Call For  
IMMEDIATE ACTION

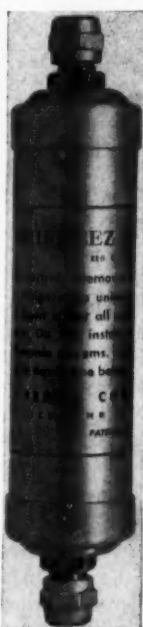
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(Send for Traco's complete list  
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BERNA CORP.  
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UNITS

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ANY QUANTITIES • MUST BE NEW

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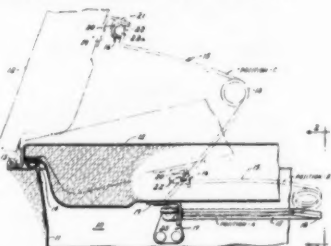
Week of April 17  
(Continued)

2,549,015. GRID STRUCTURE FOR RE-  
FRIGERATORS. Gust Roud, Evansville,  
Ind., assignor to Servel, Inc., New York,  
N. Y., a corporation of Delaware. Applica-  
tion Nov. 10, 1936, Serial No. 110,077. 5  
Claims. (Cl. 62-108.5.)



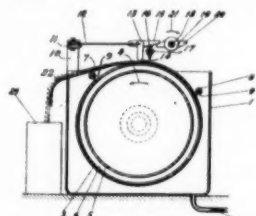
3. A distortable grid for refrigerator  
ice freezing trays and comprising a plu-  
rality of alternate transverse and longi-  
tudinal walls in substantially vertical in-  
tersecting planes, interconnecting hinges  
to permit relative movement upon exertion  
of a distorting force, and constructed and  
arranged so that said force is exerted  
upon a longitudinal wall through a trans-  
verse wall.

2,549,128. LID STAY. John H. Pfeiffer,  
Ambler, Pa., assignor to Philco Corp.,  
Philadelphia, Pa., a corporation of Penn-  
sylvania. Application June 11, 1948, Serial  
No. 32,351. 4 Claims. (Cl. 217-60.)



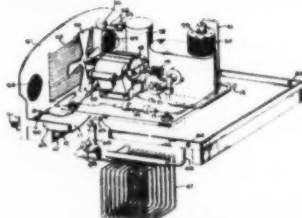
1. In combination with structure includ-  
ing a cabinet and closure means hingedly  
mounted for opening and closing move-  
ments with respect to said cabinet, a sup-  
port device having spaced end portions  
resiliently urged apart, and means pivotally  
associating one of said end portions  
with said cabinet and the other of said end  
portion with said closure means, whereby  
said device may react between said cabi-  
net and closure means and exert force  
tending to move said closure means to  
open position, said pivotal means accom-  
modating movements of said device from  
a position in which the force exerted be-  
tween the end portions thereof is exerted  
in a direction generally parallel to the  
hinge axis to a position in which at least  
the major portion of the force exerted be-  
tween said end portions is exerted in a  
direction transverse to the hinge axis.

2,549,215. METHOD OF AND MEANS  
FOR PRODUCING BROKEN ICE. Svend  
Axel Jorgen Mansted, Copenhagen, Den-  
mark. Application Feb. 26, 1946, Serial No.  
650,273. In Denmark July 30, 1946. Sec-  
tion 1, Public Law 690, Aug. 8, 1946.  
Patent expires July 30, 1962. 5 Claims.  
(Cl. 62-105.)

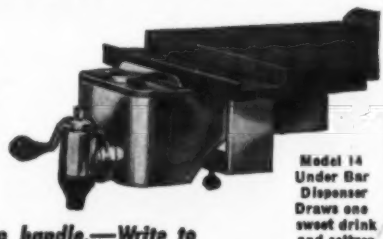


1. A device for producing ice chips in  
fragments, comprising a movable mem-  
ber having a smooth surface, means to  
cool this surface below the freezing tem-  
perature, means for supplying water to  
the said surface for producing a progres-  
sively thickening sheet of ice thereon,  
chisel members to break the ice sheet  
arranged for reciprocating movement per-  
pendicular to the ice sheet, resilient  
members tensioned to normally press said  
chisel members toward the movable mem-  
ber, means for actuating the said resili-  
ently mounted chisel members to perform  
a series of strokes in rapid succession on  
the ice sheet, and means for removing the  
broken ice from the movable member.

2,549,421. PORTABLE REFRIGERATOR  
WITH REMOVABLE UNIT. Ulrich S.  
Carrington, Burbank, Calif. Application  
Jan. 3, 1949, Serial No. 68,801. 7 Claims.  
(Cl. 62-117.3.)



1. A refrigerator, comprising a refrig-  
erating compartment having walls, a floor,  
and a door, a refrigerating mechanism  
having a base forming the top closure of  
said refrigerating compartment, a mount-  
ing plate on which is mounted a compres-  
sor, a motor for said compressor, and a re-  
placeable refrigerant tank, and under  
which is mounted an evaporator coil, a



Model 14  
Under Bar  
Dispenser  
Draws one  
sweet drink  
and seltzer

The ornamental design for a machine  
for making and storing ice cubes, sub-  
stantially as shown.

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New" page.

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## Government Contracts

## PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the  
various indicated U. S. Government procurement offices. This  
list is compiled and made available daily on a free pick-up basis.  
Prospective bidders may obtain complete bid sets by a request  
to the purchasing office under which the purchase is listed in  
this Synopsis. Be sure to identify completely the bid invitation  
you wish by including in your request the item description, the  
invitation number or reference number and the opening date.  
This will save time in filling your request. For reasons of  
economy, specifications are normally not included with the bid  
invitations unless the specification is a new one. First time  
bidders on a particular item should request a copy of applicable  
specifications and drawings at the time the request for a bid  
set is made.

## DEPARTMENT OF DEFENSE

Description	Quantity	Reference No.	App. Bid Date
Mobile District—CE—P.O. Box 1169, Mobile 7, Ala. Furn & install temp cycling & cond equip in temp cycling & cond bldg /ORC-3- & -6/ red- stone ARS NR Huntsville, Ala. plans & specs avail 19 Jul 51 deposit on plans \$5.00	1 job	(ENG-01-076-52 8B)	9 Aug 51

## GENERAL SERVICES ADMINISTRATION

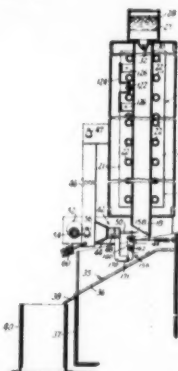
Description	Quantity	Reference No.	App. Bid Date
Regional Information Officer, Region 3, General Services Ad- ministration, Washington 25, D. C. Cooler, water, ice-cooled, inverted bottle type, in accord. GSA spec. 2131/02 rating 97, reg. 4 applies/	40 ea	(10W-688-RR)	7-26-51

## U. S. DEPARTMENT OF COMMERCE

Description	Quantity	Invitation No.	Opening Date
Chief, Division of Purchase and Sales, Maritime Administration, Washington, D. C. Refrigerators, electric fed, spec. AA-R-211B type 111, shipboard use	115 ea	(SD52-390)	7-27-51
Chief, Procurement Section, National Bureau of Standards, Conn. Ave. and Van Ness St., N. W., Washington 25, D. C. Fitting Mueller or equal	92 ea	B-2-14-52	7-30-51
Valve, water regulating electromagnetic Co. only	2 ea	B-2-14-52	7-30-51
Gauge, pressure	20 ea	B-2-13-52	7-30-51

condenser coil, fixed fastening means for  
attaching said plate to said base, a panel  
integral with and extending upwardly  
from said base, said panel having an open-  
ing therein in which said condenser coil  
is positioned for cooling the refrigerant in  
said mechanism, and a cover for enclosing  
said mechanism, said panel forming one  
enclosing side for said mechanism.

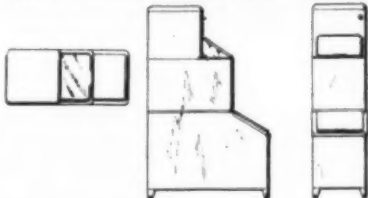
2,549,747. ICE-MAKING APPARATUS.  
Meldon Gerald Leeson, York, Pa., assignor  
to Flakice Corp., Brooklyn, N. Y., a cor-  
poration of Delaware. Application July  
24, 1946, Serial No. 686,021. 22 Claims.  
(Cl. 62-106.)



1. In ice-making apparatus, the combina-  
tion of, a cabinet structure, a refrigeration  
system having an evaporator in said  
cabinet structure formed by a pair of  
parallel spaced evaporator sections hav-  
ing freezing zones therebetween, a bank  
of vertical freezing tubes which are square  
in cross-section and positioned parallel  
and side-by-side and occupying said freezing  
zone in heat-exchange relationship  
with each other and with said evaporator  
sections, an elongated water header posi-  
tioned along the tops of said freezing  
tubes and having a plurality of water dis-  
tributing nipples projecting respectively  
into the tops of said freezing tubes and  
having water outlet openings for direct-  
ing water against the sides of each tube,  
water-supply means including a pump to  
supply water to said header whereby  
a steady stream of water flows down each  
tube during the freezing operation, means  
to initiate the supplying of heat to said  
tubes to melt ice formed therein whereby  
the ice falls from the bottom ends of the  
tubes, and means to sever the ice as it  
emerges including a horizontal cutter bar  
which is adapted to be swung to and  
from a position adjacent the lower ends  
of said tubes and a plurality of ice picks  
carried by said cutter bar and adapted  
to project into the ice as it emerges from  
the tubes.

## DESIGNS

162,968. MACHINE FOR MAKING AND  
STORING ICE CUBES. Thomas T. Lund, Jr.,  
Mill Valley, Calif., assignor to Lacon  
Corp., a corporation of California. Applica-  
tion Jan. 12, 1951, Serial No. 13,773.  
Term of patent 7 years. (Cl. D67-3.)



## CONTRACTS AWARDED AS OF JULY 4, 1951

Department Of The Navy, Bureau Of Ships, Washington 25,  
D. C.  
Pump, condenser circulating for refrigeration plant.—Coul-  
Pumps, Inc., Seneca Falls, New York  
Yards And Docks Supply Office, U. S. Naval Construction Bot-  
talion, Port Hueneme, California  
Refrigerators.—Sunset Electric Company, 300 Westlake North,  
Seattle 14, Wash.  
Chicago Quartermaster Depot, U. S. Army, 1519 W. Pershing  
Road, Chicago 8, Illinois  
Refrigerators, Portable Walk-in.—Hussmann Refrigerator Co.,  
St. Louis, Mo.  
Cabinet, Ice Cream Storage.—Ice Cooling Appliance Corp.,  
Morriston, Illinois  
Chest, Ice Storage No. 2.—Lonergan Mfg. Co., Albion, Mich.  
Refrigerator, Prefab. Sectional.—Federal Refrigerator Co., Au-  
gusta, Wis.  
Cases, Display, Refrig.—Ed. Friedrich Inc., San Antonio, Tex.  
Refrigerator, Prefab. Sectional.—Hussmann Refrigerator Co.,  
St. Louis, Mo.  
Dispenser, Drinking Water.—Sunroc Co., Glen Riddle, Pa.  
Dispenser, Drinking Water.—Steel City Mfg. Co., Youngs, Ore.  
Headquarters, Air Materiel Command, Wright-Patterson Air  
Force Base, Dayton, Ohio  
Indicator pressure multi-purpose, cl-05D.—Kollman Instru-  
ment Corp., Square D Co., Elmhurst, N. Y.  
Refrigeration turbines, cl-03C.—AirResearch Mfg. Co., Garrett  
Corp., Los Angeles, Calif.  
Temperature indicators, cl-05D.—Lewis Engineering Co., Au-  
gusta, Conn.  
U. S. Navy Purchasing Office, Washington 25, D. C.  
Coolers, drinking water, electric, type I, etc.—Westinghouse  
Electric Corporation, 1625 "K" St., N.W., Washington 6, D. C.  
Temperature Regulators and Repair Parts.—Robertshaw-Fulton  
Controls Co., Fulton Sylphon Div., Knoxville 4, Tenn.  
Corps of Engineers, U. S. Army, North Atlantic Div., Philadel-  
phia District, 121 N. Broad Street, Philadelphia, Pa.  
Ice Plant, 15 tons, Equipment Only, Motor Driven, 3 Phase.—  
York Corp., 1616 Walnut St., Philadelphia 3, Pa.  
Ice Plant, 3.6 tons, Equipment Only, Motor Driven.—Frick Co.,  
Waynesboro, Pa.  
Navy Department, Aviation Supply Office, Oxford Avenue and  
Martin's Mill Road, Philadelphia 11, Pennsylvania  
Valves, temperature regulating, for ventilating heaters & Ful-  
ton-Sylphon Div., Robertshaw-Fulton Controls Co., 503 World  
Center Bldg., Washington 6, D. C.  
Armed Services Medical Procurement Agency, 84 Sands Street,  
Brooklyn, New York  
Refrigerator, Mechanical.—Victor Products Corporation, 901 Pope  
Avenue, Hagerstown, Maryland

## CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$5.00  
per insertion. Limit 50 words. 10¢ per  
word over 50.

RATES for all other classifications \$7.50  
per insertion. Limit 50 words. 15¢ per  
word over 50.

ADVERTISEMENTS set in usual classif-  
ied style. Box addresses count as five  
words, other addresses by actual word  
count. Please send payment with order.

## POSITIONS WANTED

AIR CONDITIONING—commercial refrig-  
eration heating mechanic over 20 years'  
experience desires position with reliable  
company as service and (or) erection  
manager. Can read blue prints, have a  
working knowledge of electricity, plumb-  
ing, layout and estimating. References.  
BOX 3779, Air Conditioning & Refrigeration  
News.

## POSITIONS AVAILABLE

BRANCH SALES MANAGER wanted—man  
with managerial ability and knowledge  
of branch routine. Refrigeration and oil  
burner parts experience, good record of  
sales, and unquestionable references. Re-  
ply by letter only, stating your experi-  
ence and background. THE CAPSON  
CO., INC., 108 Rogers Avenue, Brooklyn  
16, New York.

CARRIER CORPORATION has opening  
for service supervisor in Kansas City and  
Los Angeles districts. Must have prac-  
tical field experience as well as technical  
knowledge of air conditioning and refrig-  
eration equipment for all types of appli-  
cations. Address inquiries and interview  
request to J. A. Gazelle, CARRIER COR-  
PORATION, Room 1186, Merchandise  
Mart Plaza, Chicago, Illinois.

REFRIGERATION PROJECT engineer—  
must have good theoretical knowledge of  
refrigeration and heat transfer, experience  
in design and application of fraction/  
horse power refrigeration systems (capil-  
lary type especially) for mass production.  
Personality suitable for contact with  
other departments, suppliers, and cus-  
tomers when necessary. Salary range,  
\$4000 to \$6500 per year. Address all cor-  
respondence to THE VENDO COMPANY,  
7400 E. 12th Street, Kansas City, Missouri.

SALES ENGINEER wanted with experi-  
ence selling air conditioning and refrig-  
eration equipment (through distribution)  
to commercial and industrial markets.  
Positions are available at various loca-  
tions. Personal interviews granted only  
after receipt of written application giving  
full details of experience. Address:  
WESTINGHOUSE ELECTRIC CORPORA-  
TION, Sturtevant Division, Dept. AC,  
Hyde Park, Boston 36, Mass.

AGGRESSIVE MILLION dollar manufac-  
turer of commercial refrigeration and res-  
taurant equipment located in central mid-  
west desires engineer with production  
experience to take charge of experimental  
and development department. Give com-  
plete resume including age, education, ex-  
perience, references and past employment  
in first reply. Write BOX 3769, Air Con-  
ditioning & Refrigeration News.

BRANCH MANAGER wanted by nation-  
ally known manufacturer to take com-  
plete charge of retail branch located in  
central United States. Experience should  
include sales training, general adminis-  
trative, collections, service, etc. Thorough  
knowledge of business essential. Good  
opportunity for right man. Write giving  
complete details. Replies strictly con-  
fidential. BOX 3775, Air Conditioning &  
Refrigeration News.

MANUFACTURER OF air conditioning  
and ventilating units now expanding its  
sales force wishes to contact sales engi-  
neers having several years' experience  
calling on architects and contractors.  
Men selected must have an excellent sales  
record. All replies will be held confiden-  
tial. BOX 3780, Air Conditioning & Re-  
frigeration News.

SALES ENGINEER for leading Chicago  
distributor of nationally known com-  
mercial refrigeration products. Position  
includes contacting of industrial accounts  
over a large area that is exclusively fran-  
chised. Proven sales ability in the re-  
frigeration or industrial fields is necessary  
and applicant must own an automobile.  
Drawing account now available. Salary  
and commission will be applied to proven  
man after trial period. BOX 3781, Air  
Conditioning & Refrigeration News.

MAN WANTED for general service work  
and repair on refrigeration and home ap-  
pliances for suburban Detroit appliance  
dealer. Guaranteed wages. Experience  
not too important, must be willing to work  
and learn the business. Training pro-  
vided on all phases of service work. Ex-  
cellent opportunity for advancement.  
Give age, experience, family status, re-  
ferences. BOX 3783, Air Conditioning &  
Refrigeration News.

## EQUIPMENT FOR SALE

REFRIGERATOR DOORS, 3'6" by 6'6"  
double batten auto close doors complete  
with removable track heads for a 7'2"  
track. 1 1/2" corkboard insulation. 16  
gauge metal clad. Brand new. \$95.00  
each. Freight prepaid in U.S. Door  
height will be altered for anything up to  
an 11 ft. 2 in. track for \$15.00 additional.  
BIMEL CO., Cincinnati, Ohio.

WATER COOLER—Prominent brand insu-  
lated tank cooler-model C2W140135—in  
original crate—storage 140 gallons—capa-  
city 990 G.P.H. 80° 50°. Net \$895.00.  
Cafeteria water cooler—Prominent brand  
cabinet model 25G2—capacity 25 G.P.H.  
80° 45°. Less condensing unit. Net  
\$245.00. JUDSON C. BURNS, 31st & Ox-  
ford Sts., Philadelphia 21, Pa.

FIFTY USED Panelectric Cuberators  
complete with 1/2 H.P. hermetic water  
cooled units. Some crated and some un-  
crated. Some with ice bins and some  
without. Close-out special \$25.00 each as  
is—No guarantee. Original cost more than  
\$350.00. J. GEO. FISCHER & SONS, 1019  
E. Genesee, Saginaw, Michigan.

ELECTRIC WATER coolers—Pressure  
type 4 gal. \$137.50, 10 gal. \$169.50, bottle  
type \$125.00. Butcher beam scales \$22.50.  
Porcelain platters 10x15x3/4" \$5.50 dozen.  
All merchandise new, nationally adver-  
tised, in original crates f.o.b. Phila.  
GENERAL REF. & STORE FIXTURE  
CO., 919-21 W. Girard Ave., Phila. 23, Pa.

1/4-HP open and sealed type prominent  
brands condensing units complete; brand  
new; limited quantity; act now; \$52. each  
FOB New York; write for specifications.  
other sizes also available; MANN RE-  
FRIGERATION SUPPLY CO., 15 Astor  
Place, New York 3, N. Y.

FOR SALE—while they last—standard  
makes—new hermetic units—static & fan-  
cooled cond. 1/2, 3/4, 1, 1 1/2, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 25, 30, 35, 40, 45, 50, 60, 75, 90, 100, 125, 150, 175, 200, 225, 250, 275, 300, 325, 350, 375, 400, 425, 450, 475, 500, 525, 550, 575, 600, 625, 650, 675, 700, 725, 750, 775, 800, 825, 850, 875, 900, 925, 950, 975, 1000, 1025, 1050, 1075, 1100, 1125, 1150, 1175, 1200, 1225, 1250, 1275, 1300, 1325, 1350, 1375, 1400, 1425, 1450, 1475, 1500, 1525, 1550, 1575, 1600, 1625, 1650, 1675, 1700, 1725, 1750, 1775, 1800, 1825, 1850, 1875, 1900, 1925, 1950, 1975, 2000, 2025, 2050, 2075, 2100, 2125, 2150, 2175, 2200, 2225, 2250, 2275, 2300, 2325, 2350, 2375, 2400, 2425, 2450, 2475, 2500, 2525, 2550, 2575, 2600, 2625, 2650, 2675, 2700, 2725, 2750, 2775, 2800, 2825, 2850, 2875, 2900, 2925, 2950, 2975, 3000, 3025, 3050, 3075, 3100, 3125, 3150, 3175, 3200, 3225, 3250, 3275, 3300, 3325, 3350, 3375, 3400, 3425, 3450, 3475, 3500, 3525, 3550, 3575, 3600, 3625, 3650, 3675, 3700, 3725, 3750, 3775, 3800, 3825, 3850, 3875, 3900, 3925, 3950, 3975, 4000, 4025, 4050, 4075, 4100, 4125, 4150, 4175, 4200, 4225, 4250, 4275, 4300, 4325, 4350, 4375, 4400, 4425, 4450, 4475, 4500, 4525, 4550, 4575, 4600, 4625, 4650, 4675, 4700, 4725, 4750, 4775, 4800, 4825, 4850, 4875, 4900, 4925, 4950, 4975, 5000, 5025, 5050, 5075, 5100, 5125, 5150, 5175, 5200, 5225, 5250, 5275, 5300, 5325, 5350, 5375, 5400, 5425, 5450, 5475, 5500, 5525, 5550, 5575, 5600, 5625, 5650, 5675, 5700, 5725, 5750, 5775, 5800, 5825, 5850, 5875, 5900, 5925, 5950, 5975, 6000, 6025, 6050, 6075, 6100, 6125, 6150, 6175, 6200, 6225, 6250, 6275, 6300, 6325, 6350, 6375, 6400, 6425, 6450, 6475, 6500, 6525, 6550, 6575, 6600, 6625, 6650, 6675, 6700, 6725, 6750, 6775, 6800, 6825, 6850, 6875, 6900, 6925, 6950, 6975, 7000, 7025, 7050, 7075, 7100, 7125, 7150, 7175, 7200, 7225, 7250, 7275, 7300, 7325, 7350, 7375, 7400, 7425, 7450, 7475, 7500, 7525, 7550, 7575, 7600, 7625, 7650, 7675, 7700, 7725, 7750, 7775, 7800, 7825, 7850, 7875, 7900, 7925, 7950, 7975, 8000, 8025, 8050, 8075, 8100, 8125, 8150, 8175, 8200, 8225, 8250, 8275, 8300, 8325, 8350, 8375, 8400, 8425, 8450, 8475, 8500, 8525, 8550, 8575, 8600, 8625, 8650, 8675, 8700, 8725, 8750, 8775, 8800, 8825, 8850, 8875, 8900, 8925, 8950, 8975, 9000, 9025, 9050, 9075, 9100, 9125, 9150, 9175, 9200, 9225, 9250, 9275, 9300, 9325, 9350, 9375, 9400, 9425, 9450, 9475, 9500, 9525, 9550, 9575, 9600, 9625, 9650, 9675, 9700, 9725, 9750, 9775, 9800, 9825, 9850, 9875, 9900, 9925, 9950, 9975, 10000, 10025, 10050, 10075, 10100, 10125, 10150, 10175, 10200, 10225, 10250, 10275, 10300, 10325, 10350, 10375, 10400, 10425, 10450, 10475, 10500, 10525, 10550, 10575, 10600, 10625, 10650, 10675, 10700, 10725, 10750, 10775, 10800, 10825, 10850, 10875, 10900, 10925, 10950, 10975, 11000, 11025, 11050, 11075, 11100, 11125, 11150, 11175, 11200, 11225, 11250, 11275, 11300, 11325, 11350, 11375, 11400, 11425, 11450, 11475, 11500, 1152



# Refrigeration Problems

## and their Solution

by Paul Reed

For Service and Installation Engineers



Paul Reed

### Carbon Tet Use

#### By Servicemen

Since the article in this column in our April 17, 1950 issue on the hazards connected with the use of carbon tetrachloride, we have received a number of letters from readers expressing their surprise that carbon tet, as carbon tetrachloride is commonly known, is at all dangerous. Perhaps, therefore, it might be well to cover this subject again, and somewhat more fully, for it is a subject on which every refrigeration service engineer, in the field or in the shop, should be informed.

The following letter is typical of

those received, and probably reflects the general feeling regarding the use of carbon tet in refrigeration work, and probably in other classes of work also.

"In a recent issue of AIR CONDITIONING & REFRIGERATION NEWS, there was an article in the column Refrigeration Problems, that refers to hazards in the use of carbon tetrachloride. This is the first time that we have heard of any danger from using carbon tetrachloride, and we would appreciate it if you would give us more information on this subject.

"We have always considered carbon tetrachloride as the safe and very best cleaning solvent, so this article surprised us very much. Also, will you please suggest some other effective solvent, instead of carbon tetrachloride, that we can safely use."

vidual to carbon tetrachloride fumes.

Carbon tet is also harmful to the skin. It not only dries the skin by dissolving out the natural oils, but it causes the skin to become scaly, similar to that caused by a burn. This condition is difficult to cure, for the oil glands themselves are injured.

If you do use carbon tet, use it out of doors or in a room that is well ventilated. By well ventilated, we do not mean just an open window, but instead, a positive air movement carrying the carbon tet fumes away from the workman. This positive air movement may be obtained by cross ventilation, but preferably by an exhaust fan.

If you work over a tank of carbon tet, the National Safety Council recommends that you wear a gas mask.

Keep your hands out of carbon tet. Wear rubber gloves.

Frigidaire recently issued Service Circular Letter CA-5244, in which they warn of the toxic hazards of carbon tet, and urge that all of their servicing outlets observe care in its use.

#### WHAT SOLVENTS TO USE

The question then arises, "What shall we use instead of carbon tet?" Unfortunately, there is no known solvent that is as effective as carbon tet, that is completely non-toxic and non-flammable. We must be willing to accept a small hazard of flammability. There are several very good solvents that may be used cold, which although somewhat flammable, are comparatively safe if used with reasonable care.

Trichlorethylene is similar to carbon tet and is used in some "degreasing" machines. Although it is only about one fourth as toxic as carbon tet, it still is too dangerous for unrestricted use, especially in poorly ventilated rooms. Also, hands must be kept out of trichlorethylene, the same as carbon tet.

High test naphtha has a flash point of about 30° F. This means that even at a temperature as low as 30° F., the fumes from high test naphtha are flammable. So low flash point naphtha is too highly flammable in ordinary room temperature, for ordinary use.

#### STODDARD SOLVENT

Some years ago a man named Stoddard set up some specifications on a solvent that is now called by his name "Stoddard Solvent." It is made under various trade names by most of the major oil and gasoline refiners—Stanislaw, Mineral Spirits, Shell-sol, Sorasol, etc.

Stoddard Solvent is sometimes referred to as "safety solvent" and "high flash point naphtha." It is not completely safe, but is comparatively so, and has been accepted for indoor use by the National Board of Fire Underwriters, if the room is well ventilated and certain precautions are taken against open flames, sparks, etc. Also, Stoddard Solvent is not very safe at temperatures above 100° F., for at about 105° F. the fumes from Stoddard Solvent are flammable.

Stoddard Solvent does a very effective cleaning job on oily and dirty parts, but it does leave a slight oily film, that may be troublesome if the part is to be painted with certain types of paints, especially the lacquers.

Stoddard Solvent is made in two types; one that has a very unpleasant odor. This type is used by paint and varnish makers. The other type has a less disagreeable odor and is the one that refrigeration servicemen should use.

#### CLEANING MIXTURE NO. 49

The Electrochemicals Department of DuPont in its Bulletin S6-1049, describes a solvent which they call "Cleaning Mixture No. 49." It consists of (by volume)

- 70% Stoddard Solvent
- 25% Methylene Chloride (Carrene No. 1)
- 5% Perchlorethylene

This may be made up with 1 part (gallon or other measure) of perchlorethylene, 5 parts methylene chloride, and 14 parts Stoddard Solvent. According to the bulletin, its

warehouses and jobbers can furnish this mixture, or the perchlorethylene and methylene chloride, and you can mix them in the proper proportions with any good Stoddard Solvent that you may buy locally.

This mixture has a flash point above that of Stoddard Solvent only, even when 20% of the mixture has been evaporated, so this mixture is only about as flammable as kerosene.

It is somewhat toxic but only slightly so. However, rooms in which the mixture is used, especially if it is sprayed, as on motor windings, should be well ventilated.

You should not put your hands in it; use rubber gloves. Also, use care not to get it on your face or in your eyes. This advice applies to Stoddard Solvent also.

Its big advantage over Stoddard Solvent only, is that it evaporates rapidly and leaves the surface with little if any oily film or other residue.

It is not corrosive, and is inert to electrical insulation. In fact, it was originally developed for washing motor and generator windings, and is widely used in motor repair shops.

Although carbon tet is non-flammable, it is decomposed if subjected to a high temperature, such as a flame or red hot metal, to form some highly toxic fumes including chlorine and phosgene. Therefore, keep carbon tet fumes away from flames, for these fumes, toxic in themselves, become much more dangerous if decomposed by heat.

Some fire extinguishers are charged with carbon tet, for when it is pumped on to a fire, it releases carbon dioxide, which smothers the fire. However, it also releases the above mentioned highly toxic gases, so fire extinguishers charged with carbon tetrachloride can be quite dangerous if used on fires in unventilated rooms.

#### SOLVENTS USED HOT

For shop use, especially in the larger shops, it would be well to investigate the possibilities of some of the water-soluble solvents, used hot. These and other cleaning solvents and equipment were described in this column in a series of articles in the Feb. 16 to March 22, 1948, issues under the title "Cleaning Parts Before Repairing." This article now appears under the same title as Chapter 62 in Volume J-4 of the book form of "Refrigeration Problems and Their Solution."



## ANSUL REFRIGERATION OIL

THE NEW... IMPROVED... ANSUL REFRIGERATION OIL... IS A RESULT OF THE PERSISTENT SEARCH BY ANSUL CHEMISTS AND REFRIGERATION TECHNICIANS FOR THE FINEST QUALITY REFRIGERATION OIL... AT ANY PRICE!

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- c. Moisture — ANSUL CONTROLLED minimum.
- d. Lower pour point.
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- f. Lowest affinity for moisture.
- g. New low price.
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\*Improved features



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## Plumbing Code--

(Concluded from Page 1, Column 2) about 1,600 separate plumbing codes in the U. S. today. It noted that many cities require 40 to 50% more materials in their plumbing connections than are called for in the proposed code.

The report represents a consensus of members of the coordinating committee and its advisory committee. It is based on the experience and conclusions reached from research in the field of plumbing conducted at the National Bureau of Standards, University of Iowa, University of Illinois, U. S. Public Health Service Environmental Center at Cincinnati, and other laboratories.

The coordinating committee is made up of representatives of these organizations:

American Public Health Association, American Society of Mechanical Engineers, American Society of Sanitary Engineering, Building Officials Conference of America, Conference of State Sanitary Engineers, National Association of Master Plumbers, and the Western Plumbing Officials Association.

Its chairman is F. M. Dawson, dean of the college of engineering, Iowa State university. Executive secretary is Vincent T. Manas, chief of the emergency plumbing code standards branch of NPA's building materials division.

## Manitowoc--

(Concluded from Page 1, Column 3) the primary coil and copper tubing in the secondary coil.

The rate of heat transfer is regulated by the thermostatically controlled upper compartment fan. The compressor is actuated by the lower compartment thermostat, and indirectly by the upper compartment thermostat, insuring refrigeration whenever it is required by either compartment.

The upper compartment thermostat either Ranco or Cutler-Hammer, is set for a 49° F. cut-in and 43° F. cut-out. The lower compartment thermostat (Cutler-Hammer) has a 1° F. cut-in and -14° F. cut-out. Thermostats for both compartments are adjustable for either range or differential.

The cabinet is a one piece wrap-around shell of heavy steel reinforced and spot welded. Upper liner is of aluminum and the lower liner galvanized. All seams are sealed with a moisture proof compound. A two-coat white baked enamel finish is used. Other items include aluminum alloy hinges, chrome plated brass latch and escutcheons, and Panelyte breaker strips.

The upper compartment is insulated with approximately 3 in. of intermediate density Fiberglas, while the lower compartment is surrounded by about 3½ in. of high efficiency Fiberglas.

A mullion heating element of 15 watts is located behind the breaker strip between the two compartments to eliminate sweating on that surface. A resistance heating element is also provided along the cabinet face, and at each side and bottom, to minimize condensation of moisture on the cabinet.

The upper, normal temperature compartment measures 25½ in. high, 30 in. wide, and 24½ in. deep on the inside. It is equipped with three ribbed glass shelves that are pre-spaced to provide 15.4 sq. ft. of area, two door racks for storage on the door panel, separate drawers made of aluminum with aluminum pulls for meats and vegetables, and a 10-watt incandescent light.

Automatic defrosting is provided, with excess moisture draining off into an aluminum drip collection pan and a glass drip receptacle located behind the meat drawer.

The lower, freezer compartment



This "Zero-Freeze" combination refrigerator and home freezer combines a 10-cu. ft. refrigerator on top of a 10-cu. ft. freezer, with one electrical unit that operates independently for each.

has interior dimensions of 31½ in. high, 29 in. wide, and 23½ and 9½ in. (in front of the compressor compartment) deep.

It is equipped with three steel shelves offering 10.6 sq. ft. of area. On the left side is a narrow compartment that stacks five ice cube trays one on top of the other. Each

tray holds 14 cubes weighing a total of 2 lbs. per tray. The aluminum tray rack is fitted with runs for each tray to minimize freezing in place.

Uncrated weight of the cabinet is 462 lbs. Crated it weighs 545 lbs.

Suggested retail price is \$599.95.

A butter conditioner is available as an accessory.

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THE MOST EFFICIENT  
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Flow is ACROSS the molded element—THROUGH the Cross-Flo openings and ACROSS the extra capacity, HIGHLY EFFICIENT FIBERGLAS Depth Filter.

# DEFROST AUTOMATICALLY

35° F.  
24° F.

in this refrigeration range  
and higher

with **TP\***

T-P\*... \*Time-Pressure defrosting... is needed and wanted by every owner of meat display cases, self-serve cases, reach-in boxes and other refrigeration equipment maintaining temperatures from approximately 24° to 35° F. and higher.

And no wonder! T-P\* automatically and correctly varies the defrost period as required... no more annoying problems to determine length of shut-down time which fluctuates considerably with load and weather conditions. Yes... T-P\* avoids unnecessary shut-down time by stopping compressor only long enough to defrost... NO LONGER... and does it automatically!

The operation of the PENN Series 325 Time-Pressure Defroster is simple. At predetermined intervals a synchronous timer stops the compressor. Then, when defrosting is completed, rising back pressure in the system automatically starts the refrigeration cycle.

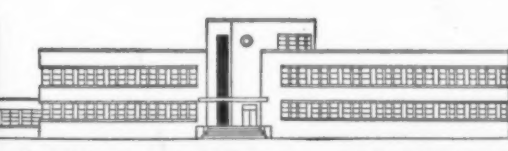
Simple, compact and convenient to mount and wire, the Series 325 is easy to sell. Learn how you, too, can cash in on extra sales and profits... ask your wholesaler or write **Penn Electric Switch Co., Goshen, Indiana**. Export Division: 13 E. 40th Street, New York 16, N. Y., U.S.A. In Canada: Penn Controls Limited, Toronto, Ontario.



Interior (above) and exterior (right) of Type 325. Timer can be set for one to eight "off periods" every 24 hours. Length of "off period" varies automatically with the frost condition of the coil.



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